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ABSTRACT

One of two reports on the 1985 Home Information Technology Study (HITS), a national survey conducted to provide insights into the role played by educational technologies in out-of-school learning, this volume provides current national estimates of the nature and extent of non-school learning by children, adolescents, and adults, and examines the factors involved in the decision to engage in non-school learning and the processes and resources typically employed in different types of learning. The first of three major sections in this report, the introduction provides background information on the study and a description of the survey methodology. Detailed analyses of the data are presented in the second section for: (1) the nature and extent of non-school learning; (2) the most important learning activities; (3) factors related to the choice of the most important non-school learning; (4) use of resources in non-school learning, including involvement of other people and use of non-human resources; and (5) attitudes toward learning resources. The third section provides a summary of the major findings and conclusions drawn from the data analyses. Appended materials include copies of the HITS interview items for all four age groups; a summary of the HITS study design and survey methodology; and a discussion of the precision of reported estimates and generalized standard errors. (BBM)

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Out-of-School Learning Among Children, Adolescents, and Adults

Report of Findings From the 1985 Home Information Technology Study (HITS)

Corporation for Public Broadcasting
Washington, D.C.

John A. Riccobono

Janice S. Ancarrow
Project Officer
Center for Statistics

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PREFACE

Since 1970, the Corporation for Public Broadcasting (CPB) and the Center for Statistics (formerly the National Center for Education Statistics) have co-sponsored a program of research into the educational uses of telecommunications and information technology or electronic media. Recognizing that the educational process is a lifelong process, involving learning in both formal and informal settings, the CPB/CS cooperative research program has involved national surveys of the availability and use of instructional technologies in public and private elementary, secondary, and postsecondary schools. The results of these studies have provided valuable insights into the role played by educational technologies in the nation's schools and classrooms. Such information is needed as a basis for effective planning, implementation, and evaluation of policies and programs designed to enhance educational achievement and to upgrade the instructional delivery system.

The current Home Information Technology Study (HITS) represents the first attempt to add a household-based component to the comprehensive information base which has been developed over the last decade and a half through the CPB/CS cooperative research program, and follows several years of planning and feasibility study. The underlying objectives for the study are only slightly different conceptually from the in-school study components, namely: to determine what people consider important enough to learn on their own, with an emphasis on what is involved in such "informal" learning and why particular learning aids (including but not limited to telecommunications technology) are chosen or preferred over others.

The findings of the Home Information Technology Study are reported in two separate documents, which differ in terms of their primary focus. The current report focuses on the nature and extent of learning that occur outside the formal school setting and the processes and resources (including technology) involved in such learning. A companion report, "Use of Electronic Information Technologies for Non-School Learning in American Households" focuses on the nature and extent of availability and use of information technologies for learning in the household.

Edward J. Coltman
Technical Project Director
Corporation for Public Broadcasting

Janice S. Ancarrow
Project Officer
Center for Statistics

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Our associates at Research Triangle Institute (RTI) of North Carolina, under the expert direction of Dr. Graham Burkheimer, were responsible for the sampling and survey operations aspects of the study. Others at RTI deserving special acknowledgment are Jan Whelan, who provided programming support for the data analyses, and Jeri Conklin who typed, proofed, and assembled the draft report.

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I. INTRODUCTION

A. General

While the concept of learning is complex and only partially understood, there is widespread agreement that learning may occur at any age and under many different conditions. Most research has been devoted to the investigation of "formal" learning, which typically occurs in a school or similar instructional setting, under the guidance and control of an instructor. Prior to the current effort, relatively few studies have dealt with the topic of "informal," or non-school, learning, and none on a national scale. Consequently, little is known about the nature and extent of this phenomenon. What and how much do people learn informally, outside of school? What do people consider important learning and how do they go about accomplishing such learning? What are their attitudes and preferences regarding available resources and do these differ for different types of learning? The answers to such questions will have major implications for educational programmers and policymakers who are concerned with enhancing or facilitating educational efforts at all levels and in all settings.

This report is one of two which summarize the results of the 1985 Home Information Technology Study. This report focuses on informal, or non-school, learning and the decisions and processes involved, while a companion report[1] focuses on information technologies, their availability, and instructional use in the household. More specifically, the major purposes of the current report are:

- To provide current national estimates of the nature and extent of non-school learning by children, adolescents, and adults; and
- To examine the factors involved in the decision to engage in non-school learning and the processes and resources typically employed in different types of learning.

B. Overview of HITS Study Design

The study was designed to collect data from (or about) household members in four age groups: 2-to-5-year-olds, 6-to-11-year-olds, 12-to-17-year-olds, and adults (18 years and older). A computer assisted telephone interview

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[1] Riccobono, J.A., "Use of Electronic Information Technologies for Non-School Learning in American Households," Corporation for Public Broadcasting and National Center for Education Statistics, 1986.

(CATI) system was employed and household identification was accomplished through the Mitofsky/Waksberg random digit dialing procedure.[2] The complete sampling procedure involved screening randomly selected telephone numbers to identify households, rostering household members with respect to age and sex to determine household composition, and selecting household members within rostered households according to predetermined selection rates for each of the four age groups. Targeted sample sizes for each age group were: 2,203 2-5 year olds, 1,102 6-11 year olds, 552 12-17 year olds, and 1,650 adults.[3] The determination of sample sizes was based on considerations of expected sampling error of estimates and resources available for conducting the study. The final sample is representative of approximately 13,400,000 2-5 year olds, 18,300,000 6-11 year olds, 22,900,000 12-17 year olds, and 164,000,000 adults.[4]

Four separate questionnaires (one for each age group) and a household screening form were designed for completion by telephone interview. Since these questionnaires represented major revisions of earlier field test instruments, they were subjected to limited pretesting, after which they were further modified to accommodate better their administration by telephone and to incorporate necessary survey control parameters. A copy of the items included in each interview is provided in Appendix A. Individual questions were directed to those respondents who would best be able to provide the requested information reliably. Thus, adult sample members were interviewed directly, but proxy interviews with an adult family member (i.e., the parent or guardian most involved in the child's education) were conducted for all sample members under 18 years of age. It was felt that any limitations of the ability of proxies to report for their children were outweighed by the potential data quality and telephone interviewing problems involved with interviewing children directly.

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[2] See Waksberg, J. 1978. Sampling Methods for Random Digit Dialing. Journal of American Statistical Association, Vol. 73, pp. 40-46.

[3] Because the selection procedure used called for sampling of households with replacement, some households (and the associated respondents within household) were expected to be selected more than once. Therefore, the targeted number of respondents given includes such replication.

[4] Excluded from the study universe were children under 2 years of age, persons in households without telephones and persons in households with non-English speaking adults.

All telephone interviewers received extensive training over a two-day period both in general CATI operations and in the specific administration of each HITS interview question. Data were collected over a period of approximately four and one-half months, from 11 February to 22 June 1985. Telephone interviewing was conducted as a 7-day-a-week operation, with two operational interviewer shifts. Up to 18 interviewers were employed per shift and two supervisors were on hand to provide assistance and quality control, including "listen-in" monitoring of actual interviews performed by each interviewer.

Success rates for rostering identified households approached 90 percent and, within rostered households, interviews were obtained from over 75 percent of sampled adults and for over 90 percent of children sampled within the other three age groups. These response rates exceeded expectation and, consequently, the final number of interviews exceeded the target number in all four age groups.

A sampling weight was assigned to each member in the original sample to account for unequal selection probabilities; these weights were further adjusted for nonresponse in an attempt to reduce, to the extent possible, the resulting potential bias. Adjusted weights were then used to estimate results for the total populations of 2-5 year olds, 6-11 year olds, 12-17 year olds, and adults in the nation. Further detail on the HITS design and methodology appears in Appendix B.

C. Definitions of Learning

As mentioned above, this report focuses on informal or non-school learning and the processes involved in such learning. The problems involved in surveying people with regard to their informal learning are obvious. The concept of "learning" is highly abstract and can have different connotations for different people. Learning occurs continuously--from media, people, and experiences. Informal learning may be structured or unstructured, an isolated event or part of a long-term learning project. It may be actively sought by the learner or happen serendipitously. During a previous field test, efforts to define "learning activity" for the respondent proved fruitless, as different individuals interpreted the definition in different ways. Therefore, for purposes of this study, it was decided that learning activity be defined simply as anything identified by the respondent, after prompting from the interviewer, as a learning "experience."

With regard to this inventorying of learning activities, respondents were prompted as to specific kinds of learning within two broadly defined categories:

(1) Practical/Recreational learning--learning how to do something and applying it (e.g., sports, crafts, music, dance); and,

(2) Intellectual learning--acquiring skills and knowledge for their own sake (e.g., science, mathematics, foreign language).

Finally, respondents were asked to choose (from among those learning activities that they indicated having engaged in) their most important learning activity. This activity was defined as the activity on which the learner had spent the most time, or the one that the learner (or proxy respondent) thought had produced the biggest change in the learner's life. The reader should keep in mind this definition of "most important learning activity," as much of the interview and, consequently, of the results presented in this report pertain to the learning activities selected as most important by the respondents.

D. How to Read the Tables in This Report

Most tables in the following section will contain several column headings. The cell entries in the tables typically are weighted percentages (rounded to the nearest whole percent) or means and are based on the group indicated in the column heading. Because these estimates are based on a sample of 2-5 year olds, 6-11 year olds, 12-17 year olds, or adults, they may vary somewhat from the figures that would have been obtained if a complete census survey had been undertaken using the same instruments and procedures. This sampling or chance variation is measured by the standard error. For the total population, standard errors of the tabled HITS percentage estimates are no greater than $\pm$ 2 percent, 3 percent, 4 percent, and 3 percent, respectively, for 2-5 year olds, 6-11 year olds, 12-17 year olds, and adults. Because standard errors for subgroup estimates are likely to be somewhat larger, the reader should refer to Appendix C for a discussion of the reliability of reported estimates and their associated standard errors. In most cases, the last row of each table will include the actual "number of sample cases" on which the weighted estimates are based; however, some tables include these numbers in parentheses directly beneath the percentage estimates. Numbers of sample cases will, of course, vary from table to table because of variation in individual item nonresponse.

The reader should recognize that the cross-sectional approach taken in this study provides a separate "snapshot" of each of the four age groups under investigation at the same point in time. Differences between age groups should not be attributed exclusively to normal developmental progression or maturation, since the contextual and environmental influences impinging on these individuals at equivalent life cycle stages were considerably different. To properly make inferences regarding developmental, or life cycle, changes over time would require a longitudinal study of a single-age cohort.

II. FINDINGS

A. Nature and Extent of Non-School Learning

This study found that most people, regardless of age, engaged in a wide range of informal learning activities during the one-year period prior to being interviewed. Table 1 shows that virtually all parents/guardians reported both practical/recreational and intellectual learning activities for their children during the year. While the great majority (about 80 percent) of adults also reported involvement in both types of learning, almost one in ten adults were unable to identify or had not engaged in any learning activity during the year and a similar proportion indicated learning was restricted to either practical/recreational or intellectual activities only. Within age group, males and females were equally likely to have engaged in some type of learning during the one-year period.

Whereas nearly all children, regardless of age or demographic characteristics, had engaged in some learning during the year, the likelihood of adults citing at least one learning experience was related to family income level (Table 2). Low income adults were proportionately more likely to have reported no learning experience than were adults in the highest family income category (12 percent versus 3 percent, respectively). Interestingly, while lower income adults were less likely than their upper income counterparts to have engaged in both practical and intellectual learning or intellectual learning only, they were equally likely to have reported practical/recreational learning only.

Since the population of adults includes such a large age span it was decided to examine this distribution of learning within more restricted age group categories. Table 3 shows that, to a large extent, adults reporting no learning during the year were restricted to the 45-year-old and older category (14 percent), whereas virtually all (99 percent) of adults under 25 years of age had cited at least some type of practical or intellectual learning. Indeed only two-thirds of the adults over 44 years of age indicated involvement in at least one practical/recreational and one intellectual learning experience during the past year.

Table 1

Percentage Distribution of Types of Learning
By Age and Sex[a]

Learning	Preschoolers (Age 2-5)			Youths (Age 6-11)			Teens (Age 12-17)			Adults (18 Years and Older)		
	Total	Males	Females	Total	Males	Females	Total	Males	Females	Total	Males	Females
No learning	*	*	**	1%	1%	*	*	*	*	8%	9%	7%
Intellectual learning only	1	1	*	*	*	1	*	*	*	7	6	8
Practical/Recreational learning only	*	*	**	*	*	*	1	2	**	5	6	5
Both intellectual and practical learning	99	99	99	99	99	98	98	97	99	80	79	80
Number of Sample Cases	2290	1229	1061	1132	556	576	557	301	256	1707	756	951

[a] Analyses based on all sample members.

* Represents a positive percentage less than 0.5.

** Indicates no sample member represented in this cell.

Table 2

Percentage Distribution of Types of Adult Learning
By Family Income Level[a]

Learning	Adults (18 years and older)			
	Less Than $10,000	$10,000-20,000	$20,000-40,000	More Than $40,000
No learning	12%	9%	8%	3%
Intellectual learning	13	6	6	4
Practical/recreational learning	4	5	5	5
Both intellectual and practical learning	71	80	81	88
Number of Sample Cases	197	351	594	345

[a] Analyses based on all adult sample members.

Table 3

Percentage Distribution of Types of Learning Among Adults By Age Group of Learner[a]

Learning	Age Group		
	Age 18-24	Age 25-44	Age 45 and older
No learning	1%	5%	14%
Intellectual learning only	1	4	12
Practical/recreational learning only	5	4	7
Both intellectual and practical learning	93	87	67
Number of Sample Cases	302	724	679

[a] Analyses based on all adult sample members.

Non-school learning is available to most adults through education/training programs sponsored by a variety of business or community service organizations. Many of these programs are available to interested persons on a voluntary basis, while others may be a requirement of employment. Table 4 provides estimates of the extent of participation in such programs by adults. As the table shows, participation is greatest among programs sponsored by individuals' employers, with about one-fourth (28 percent) of all adults reporting having attended such programs during the year. Adults 25-44 years old were proportionately most likely to have participated in employer-sponsored programs, both on a voluntary and required basis, followed in turn by 18-24 year olds and persons over 45 years old. Adults 25-44 years old were also most likely to have participated in programs sponsored by other business organizations or professional associations. Although almost never a requirement of employment, voluntary participation in training programs sponsored by community service organizations rivaled such participation in employer-sponsored programs, with 17 percent of all adults reporting participation in the former. While such programs appear to have been less popular than employer-sponsored programs among 25-44 year olds, voluntary participation by adults over 44 years old in community service ogranization programs was about twice that for employer-sponsored programs (17 percent versus 9 percent, respectively). Less than five percent of adults, regardless of age group, reported having participated in education/training programs offered by the mass media during the year.

According to parents/guardians, children of all ages typically engaged in more than 15 different non-school learning experiences during the year (Table 5), with preschool age children averaging somewhat more (about 18 per year) than teenage children (about 15 per year). Adults reported substantially fewer learning experiences, with a mean and median of about 8 different activities. Within age group, however, no significant differences were found between males and females in the numbers of different learning activities reported.

About two-thirds of the learning activities among children under 12 years of age were intellectual rather than practical/recreational in nature. Teens and adults also reported more intellectual learning activities, although the ratio of intellectual to practical learning was somewhat lower for these groups than for younger children.

Table 4

Percentage Distribution of Adult Participation
in Variously Sponsored Education/Training Programs
By Age Group[a]

Learning	Total (All Adults)	Age Group: Age 18-24	Age 25-44	Age 45 and older
Employer/Company:				
Yes, Voluntary	18%	18%	27%	9%
Yes, Required by work	10	11	14	5
No	72	71	59	86
Other Business Organization/Company:				
Yes, Voluntary	8	6	13	4
Yes, Required by work	2	1	2	2
No	90	93	85	94
Mass Media (e.g., TV Courses):				
Yes, Voluntary	2	3	3	1
Yes, Required by work	1	1	1	1
No	97	96	96	98
Community Service Organization (e.g., Church, Charity Group):				
Yes, Voluntary	17	15	18	17
Yes, Required by work	*	*	1	*
No	82	85	81	83
Other Organization/Agency (e.g., Labor Union, Professional Association):				
Yes, Voluntary	9	7	14	6
Yes, Required by work	1	1	1	1
No	90	92	85	93
Number of Sample Cases	1753	304	739	710

[a] Analyses based on all adult sample members.

* Represents a positive percentage less than 0.5.

Table 5

Number of Learning Activities
By Age and Sex[a]

Number of Learning Activities	Preschoolers (Age 2-5)			Youths (Age 6-11)			Teens (Age 12-17)			Adults (18 Years and Older)		
	Total	Males	Females	Total	Males	Females	Total	Males	Females	Total	Males	Females
Practical/Recreational:												
Mean	6.0	6.0	6.1	5.6	5.5	5.7	6.2	6.2	6.1	3.6	3.6	3.5
Median	6	6	6	6	6	6	6	6	6	3	3	3
Mode	7	6	7	6	6	6	6	6	5	0	0	0
Intellectual:												
Mean	11.8	11.8	11.9	10.8	10.7	10.8	9.0	8.5	9.7	5.2	5.3	5.2
Median	12	12	12	11	11	11	9	9	10	5	5	5
Mode	12	12	13	13	13	13	11	11	9	0	0	0
Total (Practical and Intellectual):												
Mean	17.9	17.8	18.1	16.4	16.1	16.6	15.2	14.7	15.9	8.8	9.0	8.7
Median	18	18	19	17	17	17	16	15	16	8	8	8
Mode	20	20	19	19	19	19	16	18	16	0	0	0
Number of Sample Cases	2290	1229	1061	1132	556	576	557	301	256	1707	756	951

[a] Analyses based on all sample members.

The relationship between number of learning experiences and family income level was not consistent across age groups (Table 6). For adults, the average number of learning activities reported was directly related to family income level, with a mean of 7.6 for the lowest income group and a mean of 10.7 for the highest income group. This relationship was less clearcut among preschool and pre-teenage children and, unfortunately, insufficient sample sizes prohibited such investigation among teenage children.

It was hypothesized that the extent of non-school learning may be greater among children (especially 2-5 year olds) in homes where both parents are present than in single-parent households, since single parents would presumably find it more difficult to provide the time and/or resources required for such learning. However, as Table 7 shows, this hypothesis was not supported by the results. That is, no significant differences in the average number of learning activities reported for children in single-parent and two-parent households were obtained.

The types of learning activities undertaken during the year varied widely for all age groups (Table 8). With few exceptions, where similar types of activities were appropriate to all age groups, they were proportionately most likely to have been learned by 2-5 year olds and proportionately least likely to have been learned by adults. Notable exceptions to this finding were camping/outdoor survival, science, sex education, and computers for which children over six years old were most likely to have been involved.

Although learning among 2-5 year olds appears to be restricted to a more limited set of different learning areas than is learning among older children and adults, within those areas appropriate to preschool age children, learning was pandemic. As Table 8 shows, according to parents/guardians, each of seven different types of learning activities were engaged in by 90 percent or more of preschool age children and more than 80 percent of these children had participated in 15 of the 24 learning activities specifically inquired about in this study. The pattern of learning activity among 6-11 year olds is quite similar, although no single activity type was endorsed for 90 percent of this cohort and substantially fewer activities (i.e.; seven) were reported for 80 percent or more of these children.

Learning among teenage children and adults involved somewhat greater diversity of activity, including practical/recreational areas not appropriate for younger children. However, only two learning areas (household chores/

Table 6

Number of Learning Activities
By Age and Family Income Level[a]

Number of Learning Activities	Preschoolers (Age 2-5)				Youths (Age 6-11)				Adults (18 years and older)			
	Less Than $10,000	$10,000 20,000	$20,000 40,000	More Than $40,000	Less Than $10,000	$10,000 20,000	$20,000 40,000	More Than $40,000	Less Than $10,000	$10,000 20,000	$20,000 40,000	More Than $40,000
Practical/Recreational:												
Mean	5.9	6.1	6.2	6.1	5.3	5.6	5.6	5.8	3.0	3.5	3.7	4.5
Median	6	6	6	6	6	6	6	6	3	3	4	4
Mode	6	7	6	7	5	6	5	6	0	0	4	4
Intellectual:												
Mean	10.9	11.7	12.2	12.3	10.3	10.5	10.8	11.1	4.6	4.9	5.4	6.3
Median	11	12	12	13	11	11	11	12	3	4	5	6
Mode	12	11	12	14	14	13	14	13	0	1	0	6
Total (Practical and Intellectual):												
Mean	16.8	17.8	18.4	18.4	15.6	16.0	16.5	17.0	7.6	8.4	9.0	10.7
Median	17	18	19	19	16	17	17	17	6	8	9	11
Mode	18	18	20	21	17	19	20	19	0	0	0	12
Number of Sample Cases	243	542	983	374	100	241	490	229	197	352	597	348

[a] Analyses based on all sample members.

Note: Sample sizes for family income categories for 12-17 year olds were considered insufficient for stable estimation and, therefore, estimates for this age group are not presented.

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Table 7

Number of Learning Activities
By Age and Number of Parents in Household[a]

Number of Learning Activities	Preschoolers (Age 2-5)		Youths (Age 6-11)		Teens (Age 12-17)	
	One Parent	Two Parents	One Parent	Two Parents	One Parent	Two Parents
Practical/Recreational:						
Mean	5.8	6.1	5.5	5.7	5.8	6.4
Median	6	6	6	6	6	6
Mode	7	7	6	6	5	6
Intellectual:						
Mean	11.4	12.0	10.4	10.9	9.4	9.0
Median	12	12	11	11	9	9
Mode	12	14	13	13	12	11
Total (Practical and Intellectual):						
Mean	17.3	18.2	15.9	16.5	15.2	15.4
Median	18	19	17	17	15	16
Mode	18	20	18	19	16	20
Number of Sample Cases	333	1872	194	905	134	405

[a] Analyses based on all sample members.

Table 8

Percentage of Persons Reporting Various Types of Learning
By Age and Sex of Learner[a]

Learning Activity	Preschoolers (Age 2-5)			Youths (Age 6-11)			Teens (Age 12-17)			Adults (18 Years and Older)		
	Total	Males	Females	Total	Males	Females	Total	Males	Females	Total	Males	Females
Practical/Recreational:												
Sports/Motor Skills	88%	88%	88%	88%	88%	88%	73%	79%	67%	38%	41%	36%
Games	87	86	88	81	80	83	59	59	60	41	36	45
Social Skills	95	95	96	--	--	--	--	--	--	--	--	--
Crafts	--	--	--	61	63	60	50	44	58	31	20	40
Art	90	90	91	75	74	75	46	45	48	20	21	19
Music	68	67	71	58	53	63	48	47	48	17	18	17
Dance/Theatre	47	44	50	41	33	49	30	28	32	13	13	13
Household Chores/ Maintenance	91	89	93	84	82	86	76	74	79	53	57	50
Camping/Outdoor Survival	35	36	34	48	52	45	44	48	39	22	27	19
Business/Jobs/Personal Finance	--	--	--	16	17	16	51	52	49	35	41	30
Child Care	--	--	--	--	--	--	50	41	60	23	22	24
Driving a Car	--	--	--	--	--	--	46	52	37	14	14	14
First Aid/Lifesaving	--	--	--	--	--	--	38	41	36	20	22	19
Tax Preparation	--	--	--	--	--	--	--	--	--	21	26	17
Other	14	15	13	13	14	12	13	16	10	9	10	8
Intellectual:												
Science	55	56	54	64	68	61	51	53	49	33	38	29
Reading	86	84	89	86	83	90	69	66	73	49	46	52
Writing	82	80	85	72	67	77	47	37	60	26	25	27
Foreign Language	26	26	26	28	23	32	29	27	32	14	15	14
Social Relationships	86	86	86	77	74	79	65	61	69	38	36	40
Speech	87	87	88	--	--	--	--	--	--	--	--	--
Health/Hygiene/Safety	94	94	94	82	81	84	75	72	78	50	47	52
History	--	--	--	59	62	57	47	48	44	32	34	31
Geography/Local Directions	69	69	69	58	62	55	44	45	43	27	28	25
Civics/Government	--	--	--	34	36	31	41	42	40	28	30	26

Table 8 (continued)

Percentage of Persons Reporting Various Types of Learning
By Age and Sex of Learner[a]

Learning Activity	Preschoolers (Age 2-5)			Youths (Age 6-11)			Teens (Age 12-17)			Adults (18 Years and Older)		
	Total	Males	Females	Total	Males	Females	Total	Males	Females	Total	Males	Females
Animals/Nature Study	93	93	92	87	90	85	65	60	71	39	38	39
Math	92	90	93	73	73	72	53	53	54	24	29	20
Poetry/Nursery Rhymes	88	88	89	49	45	54	25	18	34	12	9	14
Religion	83	81	85	82	79	85	64	58	71	46	43	48
Careers (Preparation, Exploration, Awareness)	71	72	70	44	44	43	61	59	63	38	41	35
Family Development/ Relationships	94	94	94	66	65	67	53	49	58	34	33	36
Sex Education	53	52	54	56	53	59	62	59	66	--	--	--
Computers	27	29	24	55	59	52	59	63	55	32	35	28
Other	5	4	6	6	5	6	7	8	7	6	8	5
Number of Sample Cases	2301	1234	1067	1137	557	580	565	305	260	1748	773	975

[a] Analyses based on all sample members.

-- Indicates option was not prompted for specified respondent group.

maintenance and health/hygiene/safety) were endorsed for more than 75 percent of teenagers and by more than 50 percent of adults. While these two areas were among the most common learning experiences among all age groups, the actual activities involved for young children were doubtless quite different than those for adolescents and adults.

Table 8 also demonstrates some interesting differences in the types of informal learning pursued by males and females. Relatively few sex differences were observed in the learning activities of 2-5 year olds, but such differences became more extensive and more pronounced within succeeding age groups. Among 2-5 year olds, females were slightly more likely to have learned reading and writing, whereas males were somewhat more likely to have learned something about computers. Girls 6-11 years old were more likely than boys the same age to have been learning music, dance/theatre, writing, foreign language, and poetry/nursery rhymes, while 6-11 year old boys appeared somewhat more likely to have been learning about camping/outdoor survival, science, and computers.

It is among teenage children and adults where sex differences in learning become most clearcut. Among teenagers, females were substantially more likely than males to have been learning crafts, child care, writing, animals/nature study, poetry, religion, and family development; teenage males were more likely than females to have been engaged in learning activities in the areas of sports, camping/outdoor survival, driving a car, and computers. Among adults, there were only two areas in which females were substantially more likely than males to have been learning, games and crafts, both of which are recreational in nature. On the other hand, adult males were substantially more likely than adult females to have been learning in the areas of household maintenance, camping/outdoor survival, business/jobs/personal finance, tax preparation, science, math, careers, and computers.

The likelihood of certain kinds of informal learning was also related to family income level (Table 9). Regardless of age group, a consistent positive relationship between family income level and likelihood of learning sports/motor skills, games, social relationships, and computers was observed, with persons in higher income families proportionately more likely than those in lower income families to have learned such activities. While not applicable to adults, the likelihood of having received some form of sex education was similarly related to family income level for both 2-5 year olds and 6-11

Table 9

Percentage of Persons Reporting Various Types of Learning
By Age of Learner and Family Income Level*

Learning Activity	Preschoolers (Age 2-5)				Youths (Age 6-17)				Adults (18 years and older)			
	Less Than $10,000	$10,000 20,000	$20,000 40,000	More Than $40,000	Less Than $10,000	$10,000 20,000	$20,000 40,000	More Than $40,000	Less Than $10,000	$10,000 20,000	$20,000 40,000	More Than $40,000
Practical/Recreational												
Sports/Motor Skills	81%	87%	90%	91%	85%	88%	90%	91%	34%	37%	40%	57%
Games	79	89	88	91	74	82	84	83	32	42	42	54
Social Skills	97	96	96	93	--	--	--	--	--	--	--	--
Crafts	--	--	--	--	57	57	66	64	34	37	29	31
Art	85	91	93	90	76	82	73	72	13	22	20	26
Music	67	70	71	68	50	58	57	69	15	18	18	20
Dance/Theatre	58	48	44	48	51	39	38	45	11	14	11	19
Household Chores/Maintenance	88	94	93	89	83	83	86	87	49	51	56	60
Camping/Outdoor Survival	34	37	37	34	43	47	51	54	18	23	25	28
Business/Jobs/Personal Finance	--	--	--	--	--	--	--	--	21	28	40	58
Child Care									22	24	25	29
Driving a Car	--	--	--	--	--	--	--	--	17	16	14	12
First Aid/Lifesaving	--	--	--	--	--	--	--	--	19	20	22	24
Tax Preparation	--	--	--	--	--	--	--	--	15	15	24	30
Other Practical/Recreational	3	3	4	6	2	3	4	5	4	4	4	4
Intellectual												
Science	41	52	58	81	62	58	67	67	27	30	35	45
Reading	85	85	88	89	90	87	86	88	47	50	50	50
Writing	84	85	82	81	80	78	69	70	30	25	24	29
Foreign Language	27	22	25	33	28	28	25	32	8	13	15	19
Social Relationships	77	83	89	89	74	74	78	79	32	35	38	51
Speech	84	89	89	88	--	--	--	--	--	--	--	--
Health/Hygiene/Safety	87	93	96	95	81	79	84	85	50	51	50	55
History	--	--	--	--	55	59	62	57	27	32	31	40
Geography, Local Directions	67	68	71	68	41	48	61	70	19	23	27	34
Civics/Government	--	--	--	--	22	29	34	44	22	25	30	33
Animals/Nature Study	87	90	95	97	87	84	89	87	33	40	41	44
Math	88	91	94	93	71	74	73	71	23	18	26	28
Poetry/Nursery Rhymes	80	88	91	91	80	81	46	49	15	13	10	13
Religion	73	83	86	84	87	83	83	80	56	41	45	46

Table 9 (continued)

Percentage of Persons Reporting Various Types of Learning
By Age of Learner and Family Income Level[a]

Learning Activity	Preschoolers (Age 2-5)				Youths (Age 6-11)				Adults (18 years and older)			
	Less Than $10,000	$10,000 20,000	$20,000 40,000	More Than $40,000	Less Than $10,000	$10,000 20,000	$20,000 40,000	More Than $40,000	Less Than $10,000	$10,000 20,000	$20,000 40,000	More Than $40,000
Careers (Preparation, Exploration, Awareness)	83	89	75	88	44	45	44	39	24	32	42	50
Family Development/ Relationships	93	94	96	92	86	87	88	81	34	33	35	40
Sex Education	43	49	55	62	50	52	58	60	--	--	--	-
Computers	16	23	28	41	35	50	56	70	11	23	36	49
Other Intellectual	2	4	3	5	--	3	3	5	--	*	1	1
Number of Sample Cases	243	542	963	374	100	241	490	229	197	352	597	348

[a] Analyses based on all sample members.

-- Indicates option was not prompted for specified respondent group.

Note: Sample sizes for family income categories for 12-17 year olds were considered insufficient for stable estimation and, therefore, estimates for this age group are not presented.

year olds. With regard to computers, the relationship between family income and learning was particularly strong and is quite probably explained by the greater availability of personal/home computers in higher income households.

Other relationships between learning and family income level were observed, but only within age group. For example, 2-5 year olds in the highest income families were substantially more likely than those in the lowest category of family income to have learned science and poetry/nursery rhymes. Similarly, among 6-11 year olds, children from upper income families were proportionately more likely than lower income counterparts to have learned something about music, camping/outdoor survival, or civics/government; in contrast, however, 6-11 year olds in the lowest income families were substantially more likely to have learned writing and poetry/nursery rhymes. Relationships between types of learning and family income were most numerous and pronounced among adults, which is not surprising since as we have seen there was a clear relationship between amount of informal learning and income level for this age group. Higher income adults were substantially more likely than low income adults to have engaged in a variety of both practical/recreational and intellectual learning, including sports, games, art, camping/outdoor survival, business/jobs/personal finance, tax preparation, science, foreign language, social relationships, career preparation, and computers.

While the average number of non-school learning activities for children in single-parent and two-parent households did not differ significantly, some differences in the kinds of activities learned by children in these household types were observed (Table 10). Among preschool and pre-teenage children, these differences were consistently in the same direction, with proportionately more children from two-parent households having been involved in learning such activities than were those in single-parent homes. For 2-5 year olds, these activities included sports/motor skills, art, science, social relationships, and career awareness; for 6-11 year olds, they involved crafts, music, science, and computers.

Interestingly, for teenage children, the direction of the relationship between learning and number of parents in the household was different for different types of activities. For example, teenagers in two-parent households were more likely than those in single-parent homes to have learned games, crafts, camping/outdoor survival, driving a car, first aid/lifesaving,

Table 10
Percentage of Persons Reporting Various Types of Learning
By Age of Learner and Number of Parents in Household[a]

Learning Activity	Preschoolers (Age 2-5)		Youths (Age 6-11)		Teens (Age 12-17)	
	One Parent	Two Parents	One Parent	Two Parents	One Parent	Two Parents
Practical/Recreational:						
Sports/Motor Skills	80%	90%	88%	90%	76%	77%
Games	82	88	85	81	46	65
Social Skills	96	96	--	--	--	--
Crafts	--	--	58	64	43	54
Art	84	92	73	75	48	46
Music	67	70	54	60	51	48
Dance/Theatre	50	46	43	41	37	29
Household Chores/Maintenance	89	92	84	85	77	78
Camping/Outdoor Survival	32	37	47	51	34	50
Business/Jobs/Personal Finance	--	--	15	16	47	53
Child Care	--	--	--	--	49	51
Driving a Car	--	--	--	--	39	48
First Aid/Lifesaving	--	--	--	--	32	42
Tax Preparation	--	--	--	--	--	--
Other Practical/ Recreational	3	4	2	4	2	2
Intellectual:						
Science	48	56	60	66	57	50
Reading	85	88	91	86	73	67
Writing	82	83	75	72	55	45
Foreign Language	22	27	26	28	31	30
Social Relationships	79	87	77	76	68	64
Speech	84	88	--	--	--	--
Health/Hygiene/Safety	95	94	83	83	81	74
History	--	--	57	60	48	46
Geography/Local Directions	75	69	46	61	44	43
Civics/Government	--	--	31	34	39	42
Animals/Nature Study	90	94	83	88	69	65
Math	89	93	70	73	60	52
Poetry/Nursery Rhymes	84	89	46	50	27	26
Religion	79	84	81	83	60	65
Careers (Preparation, Exploration, Awareness)	64	72	41	44	55	63
Family Development/ Relationships	94	95	68	66	54	53
Sex Education	50	54	57	56	64	62
Computers	23	28	44	58	56	61
Other Intellectual	2	3	2	3	2	*
Number of Sample Cases	333	1872	194	905	134	405

[a] Analyses based on all sample members.

-- Indicates option was not prompted for specified respondent group.

career preparation or exploration, and computers; on the other hand, proportionately higher numbers of teenagers in single-parent homes were involved in learning about dance/theatre, science, foreign language, health/hygiene/safety, and mathematics.

B. Most Important Learning Activities

Thus far we have examined the kinds and amount of informal learning that occurred among children and adults without regard to the relevance or significance of that learning or to the processes involved. From among those learning activities that they indicated having engaged in, respondents were also asked to choose their "most important" learning activity. This activity was defined as the activity on which the learner had spent the most time or the one that the learner (or proxy respondent) thought had produced the biggest change in the learner's life. This section will examine the question, "What do people consider important learning and how does this differ for different groups of people?" The following section will examine the decisions and processes involved in such learning and how they differ for different types of learning.

Table 11 shows that, regardless of age group, more learners considered an intellectual type of learning activity as their most important than a practical/recreational activity. This finding holds for both males and females within each age group, with one exception: While teenage females were more likely to have selected an intellectual activity as their most important learning (63 percent), teenage males were more likely to have selected a practical/recreational activity (56 percent).

For the most part, the learning activities selected as most important by (or for) persons in each age group appeared to involve something more than incidental learning. Table 12 shows that about four-fifths or more of the learners in each age group had devoted at least one month to learning the activity described as most important.

The distribution of actual activities mentioned by those selecting a practical/recreational activity as the most important learning is shown in Table 13. As can be seen, the most frequently named practical/recreational activity for 2-5 year olds was "social skills" (e.g., manners, getting along with others), followed by sports/motor skills. These two activities accounted for almost three-fourths of the learners selecting practical/recreational

Table 11

Percentage Distribution of Type of Most Important Learning
By Age and Sex of Learner[a]

Most Important Learning Activity	Preschoolers (Age 2-5)			Youths (Age 6-11)			Teens (Age 12-17)			Adults (18 Years and Older)		
	Total	Males	Females	Total	Males	Females	Total	Males	Females	Total	Males	Females
Practical/Recreational	29%	33%	25%	37%	39%	35%	47%	56%	37%	40%	42%	38%
Intellectual	71	67	75	63	61	65	53	44	63	60	58	62
Number of Sample Cases	2264	1216	1048	1126	553	573	556	300	256	1558	684	874

[a] Analyses based on sample members reporting some learning during the past year.

Table 12

Percentage Distribution of Time Spent on Most Important Learning Activity
By Age of Learner and Type of Learning[a]

Time Spent Learning	Preschoolers (Age 2-5)			Youths (Age 6-11)			Teens (Age 12-17)			Adults (18 Years and Older)		
	Total	Prac./ Recreational	Intellectual	Total	Prac./ Recreational	Intellectual	Total	Prac./ Recreational	Intellectual	Total	Prac./ Recreational	Intellectual
Less than 1 day	1%	1%	1%	2%	3%	1%	1%	*	1%	3%	2%	3%
More than 1 day but less than 1 week	7	7	7	3	4	3	4	3	5	5	6	3
More than 1 week but less than 1 month	14	14	14	11	14	9	10	9	11	9	10	9
More than 1 month	78	78	78	84	79	87	85	88	83	83	82	85
Number of Sample Cases	2241	635	1606	1111	412	699	545	253	292	1534	602	932

[a] Analyses based on all sample members reporting some learning during the past year.

* Represents a positive percentage less than 0.5.

Table 13

Percentage Distribution of Most Important Learning Activities (Practical/Recreational) By Age and Sex of Learner[a]

Most Important Learning Activity	Preschoolers (Age 2-5)			Youths (Age 6-11)			Teens (Age 12-17)			Adults (18 Years and Older)		
	Total	Males	Females	Total	Males	Females	Total	Males	Females	Total	Males	Females
Sports/Motor Skills	21%	25%	16%	50%	57%	42%	40%	48%	25%	20%	22%	19%
Games	4	5	4	4	6	2	*	1	*	3	1	4
Social Skills	50	46	55	--	--	--	--	--	--	--	--	--
Crafts	--	--	--	4	4	3	3	2	3	12	8	15
Art	8	7	9	13	10	15	4	1	9	3	4	2
Music	5	4	6	10	6	15	14	9	23	4	3	6
Dance/Theatre	2	2	2	4	1	8	5	4	8	1	1	1
Household Chores/Maintenance	6	6	5	7	6	9	8	7	9	16	15	16
Camping/Outdoor Survival	3	3	3	6	6	5	7	8	5	5	6	4
Business/Jobs/Personal Finance	--	--	--	1	1	*	7	8	6	13	17	9
Child Care	--	--	--	--	--	--	3	1	6	11	8	14
Driving a Car	--	--	--	--	--	--	6	7	3	2	3	1
First Aid/Lifesaving	--	--	--	--	--	--	2	3	*	2	2	2
Tax Preparation	--	--	--	--	--	--	--	--	--	2	4	*
Other	1	2	*	2	2	1	2	1	3	6	6	6
Number of Sample Cases[a]	648	389	259	412	215	197	261	166	95	607	280	327

[a] Analyses restricted to sample members choosing a practical/recreational learning activity as most important.

* Represents a positive percentage less than 0.5.

-- Note: Indicates option was not prompted for specified respondent group.

activities as most important. Interestingly, among 2-5 year olds, social skills were substantially more likely to be selected as most important for females (55 percent) than for males (46 percent), whereas sports/motor skills were more likely to be the choice for males (25 percent) than for females (16 percent).

Sports/motor skills was the most frequently named most important practical/recreational learning type for both pre-teen (50 percent) and teenage children (40 percent). This was true regardless of the learner's sex, although for both age groups sports was substantially more likely to have been chosen as most important for males than for females. On the other hand, for both 6-11 and 12-17 year olds, learning in the area of the fine or performing arts (i.e., art, music, dance/theatre) was substantially more likely to have been the choice for females than for males.

Table 13 also shows that adult learners exhibited more diversity in the practical/recreational activities they selected as most important. Although sports was the most frequently named type of activity (20 percent), substantial numbers of adult learners selected other practical/recreational activities, including household chores/maintenance (16 percent), business/job/personal finance (13 percent), crafts (12 percent), and child care (11 percent). In contrast to the other age groups, the percentages of adult males and females naming sports as their most important learning activity did not differ significantly. Other sex differences were observed, however; proportionately more males than females selected business/job/personal finance as most important, whereas females were proportionately more likely than males to have named crafts and child care as the most important learning activity during the year.

Table 14 provides a similar distribution of activities for those who named an intellectual learning experience as their most important. Reading was by far the most frequently selected intellectual activity for young children, named as most important by about one-third of the parents/guardians of 2-5 year old and 6-11 year old learners. Most of the remaining two-thirds of these groups were distributed rather evenly over five or six other intellectual subject areas.

Among teenagers, computers was the intellectual learning area most frequently named as most important, despite the fact that only about one-fourth of all teenagers are estimated to have access to a personal computer in

Table 14

Percentage Distribution of Most Important Learning Activities (Intellectual) By Age and Sex of Learner[a]

Most Important Learning Activity	Preschoolers (Age 2-5)			Youths (Age 6-11)			Teens (Age 12-17)			Adults (18 Years and Older)		
	Total	Males	Females	Total	Males	Females	Total	Males	Females	Total	Males	Females
Science	1%	1%	*	6%	10%	3%	6%	8%	5%	4%	7%	3%
Reading	35	32	38	33	25	41	11	12	10	11	8	14
Writing	12	11	13	4	2	5	2	1	4	2	1	2
Foreign Language	1	1	1	*	*	1	1	1	1	1	2	1
Social Relationships	12	13	11	13	12	14	13	8	18	6	6	6
Speech	8	10	7	--	--	--	--	--	--	--	--	--
Health/Hygiene/Safety	3	4	2	2	2	2	1	1	1	10	6	14
History	--	--	--	2	3	1	3	5	1	3	3	2
Geography/Local Directions	1	1	1	1	2	*	1	1	1	*	1	*
Civics/Government	--	--	--	1	1	*	1	3	*	3	3	3
Animals/Nature Study	4	4	3	6	7	5	3	*	6	4	6	2
Math	7	7	7	5	6	4	7	6	7	3	4	1
Poetry/Nursery Rhymes	1	1	2	1	1	*	1	*	2	*	*	*
Religion	7	7	8	13	12	14	10	7	13	18	14	21
Careers (Preparation, Exploration, Awareness)	*	*	*	1	1	*	7	6	7	9	9	9
Family Development/ Relationships	4	5	3	3	2	4	5	5	5	7	6	8
Sex Education	*	*	1	1	*	2	2	1	3	--	--	--
Computers	1	1	1	7	10	4	20	29	12	13	15	10
Other	3	2	3	3	4	2	4	6	3	5	8	4
Number of Sample Cases	1616	827	789	706	332	374	293	133	160	948	403	545

[a] Analyses restricted to sample members choosing an intellectual learning activity as most important.

* Represents a positive percentage less than 0.5.

-- Note: Indicates option was not prompted for specified respondent group.

their household. Somewhat surprisingly, religion was the most popular choice among adults (18 percent) naming an intellectual learning activity as most important, although for both teenagers and adults, the distribution of intellectual activities selected demonstrates considerable diversity.

Sex differences with regard to the selection of intellectual learning activities are fewer and somewhat less pronounced than were those for practical/recreational learning. Among 2-5 year olds for whom intellectual activities were named as most important, no significant differences between males and females were observed. Among 6-11 year olds, reading was substantially more likely to have been named for females (41 percent) than for males (25 percent), while science and computers were somewhat more likely to be considered most important for males than for females. Teenage and adult males indicating intellectual learning as most important were also proportionately more likely than were females to have named computers; females, however, were more likely than males to have named religion. It is also interesting to note that among teenagers, parents/guardians were more than twice as likely to have selected social relationships as most important for females than for males.

C. Factors Related to Choice of Most Important Non-School Learning

Respondents were asked how they (or their children) first became aware of or interested in the activity that they identified as the most important non-school learning experience during the past year. Table 15 shows that "family involvement" emerged as by far the most frequently given reason for both 6-11 year olds (61 percent) and 12-17 year olds (47 percent), regardless of type of learning considered.[5] School or course work/activities were mentioned for 16 percent of 6-11 year olds and 20 percent of 12-17 year olds, and for both groups this was proportionately more likely to have been cited in regard to intellectual than practical/recreational types of learning. On the other hand, for both pre-teens and teenagers, "friends involvement" was substantially more likely to have been cited as the impetus for practical/recreational than for intellectual types of learning. Family involvement was also

[5] Unfortunately, the desire to examine the factors influencing choices of learning within more homogeneous types of learning than is provided by the practical/recreational and intellectual dichotomy was precluded by the diversity of learning activities selected as "most important" and by initial constraints on sample size.

Table 15

Impetus for Most Important Learning
By Age of Learner and Type of Learning[a]

Reason Became Aware of/Interested in Learning Activity	Youths (Age 6-11)			Teens (Age 12-17)			Adults (18 years and older)		
	Total	Practical/ Recreational	Intellectual	Total	Practical/ Recreational	Intellectual	Total	Practical/ Recreational	Intellectual
Family involvement	61%	60%	62%	47%	50%	44%	31%	35%	28%
Friends involvement	10	19	4	14	16	11	10	15	7
Reading about it	2	1	3	3	2	4	7	5	9
Other media (radio, TV, movies)	4	6	4	4	6	3	2	3	2
Watching a live performance/ demonstration	1	1	*	1	1	*	2	2	1
School or course work/ activities	16	9	20	20	13	27	10	6	12
Job or business related activities	--	--	--	--	--	--	14	11	17
Result of a purchase	2	1	2	2	1	2	1	1	*
Other "personal" experience	4	3	5	9	10	9	23	23	23
Number of Sample Cases	1115	411	704	548	259	289	1549	606	943

[a] Analyses based on all sample members reporting some learning during the past year.

* Represents a positive percentage less than 0.5.

NOTE: Question was not included in the interview for 2-5 year olds.

the most frequently cited reason by adults (31 percent) for becoming aware of or interested in their most important learning activity, regardless of whether the activity was practical/recreational or intellectual in nature. As was the case with children, adults were more likely to have named "friends involvement" as the impetus for their practical/recreational than for their intellectual learning and "school or course work" for intellectual rather than practical/recreational activities. Two additional factors emerged as more prominent for adults, however. Regardless of type of learning, about 23 percent of all adult learners indicated that they first became aware of or interested in their most important learning as a result of some "personal" experience. Another 14 percent of adults indicated that job or business related activities served as the impetus for such learning, and this was particularly likely for intellectual types of learning.

In addition to the factor or factors contributing to initial awareness of or interest in important non-school learning efforts, this study also examined the relative importance of a number of other factors which are thought to contribute to the individual's decision to learn. Parents of 2-5 year olds were asked to rate the importance of several factors in their decision to help their child learn the activity that they identified as most important. Their responses to this inquiry are reported in Table 16. Two reasons were rated "very important" by more than half of the parents/guardians of 2-5 year olds: 60 percent indicated that the child asking for help was very important in this decision and 51 percent indicated that a recent experience suggesting the child's need to learn was very important in the decision to help him/her. Each of these reasons were rated as at least "somewhat" important by about 70 percent of the parents/guardians of 2-5 year olds. As shown in Table 16, a number of other reasons were attributed some importance by substantial percentages of these parents/guardians. Interestingly, however, importance ratings for each of the factors listed were not related to the type of learning under consideration, with one exception: parents of children who learned intellectual activities as opposed to practical/recreational activities were proportionately more likely to have indicated that having "read it was time for the child to learn" was very important in their decision to help with that learning.

Table 16
Importance of Various Factors in Parents' Decision to Help 2-5 Year Olds Learn Activity By Type of Learning[a]

Reason	Total	Type of Learning: Practical	Type of Learning: Intellectual
Parent read that it was time for child to learn activity:			
Very Important	36%	27%	39%
Somewhat Important	18	22	17
Not Important	46	51	44
Parent heard on TV/radio that it was time child learned activity:			
Very Important	12	9	13
Somewhat Important	18	21	17
Not Important	70	70	70
Suggested by other family members/ relatives:			
Very Important	17	17	17
Somewhat Important	21	23	20
Not Important	62	60	63
Suggested by parent's friends:			
Very Important	9	8	10
Somewhat Important	20	23	18
Not Important	71	69	72
Child asked for help in learning:			
Very Important	60	56	62
Somewhat Important	11	8	11
Not Important	29	36	27
Recent experience suggested the need for child to learn activity:			
Very Important	51	53	50
Somewhat Important	20	22	19
Not Important	29	25	31
Recommended by day care/preschool staff:			
Very Important	22	23	22
Somewhat Important	15	16	15
Not Important	63	61	63
Parent noticed that other children the same age had learned or were learning activity:			
Very Important	28	28	28
Somewhat Important	32	35	31
Not Important	40	37	41
Number of Sample Cases	2252	639	1613

[a] Analyses based on all sample members reporting some learning during the past year.

Other factors contributing to the decision to learn by older children and adults were also investigated with respect to the most important non-school learning experience. Table 17 shows that two reasons--"desire for self-accomplishment" and "just interested in it"--were rated as very important by (or for) more than 7 out of 10 learners (and at least "somewhat" important by more than 9 out of 10 learners), regardless of age group or type of learning under consideration. "Family influence/support" was attributed similar importance in the decision to learn among pre-teen and teenage children, and more than half (57 percent) of adult learners cited this factor as very important in their decision to learn. Other reasons were also assigned some importance by substantial numbers of learners in each age group, but no significant relationship between perceived importance and type of learning was observed for any of these reasons.

D. Use of Resources in Non-School Learning

After deciding to learn something, do people normally begin by asking another person for help or do they begin by seeking information from something other than people (e.g., from books/magazines or course offerings)? And, does choice of initial learning resource differ for different age groups or for different types of learning? Table 18 shows that about 7 out of 10 pre-teen age children began their most important non-school learning by asking for help from another person, presumably a parent or other relative. Teenagers were also more likely to have sought help initially from another person, if the learning activity was practical/recreational in nature; for intellectual learning, teenagers were just as likely to have begun by seeking information from something other than people. Similarly, adults most frequently sought information from something other than people for intellectual type of learning but more often began by asking others for help when the learning was practical/recreational in nature.

Regardless of their initial choice of learning resource, respondents were classified by type of most important learning activity and compared with respect to their use of other resources, both human and non-human.

1. Involvement of Other People

Table 19 shows the percentage of persons who involved others in their most important learning activity for all four age groups and, within age group, separately for each type of learning. Unfortunately, the findings are somewhat obscured by the broad classification of learning type permitted by limitations in respondent sample size.

Table 17

Importance of Various Factors in Decision to Learn
By Age of Learner and Type of Learning[a]

Importance	Youths (Age 6-11)			Teens (Age 12-17)			Adults (18 years and older)		
	Total	Practical	Intellectual	Total	Practical	Intellectual	Total	Practical	Intellectual
Family Influence/Support									
Very Important	79%	73%	83%	72%	68%	76%	57%	59%	55%
Somewhat Important	16	19	14	19	22	16	21	23	20
Not Important	5	8	3	9	10	8	22	18	25
Friends Influence/Involvement									
Very Important	37	43	33	38	41	36	32	33	31
Somewhat Important	37	35	39	36	37	34	32	34	31
Not Important	26	22	28	26	22	30	36	33	38
Role Model in the Media									
Very Important	17	19	17	20	25	15	--	--	--
Somewhat Important	23	22	23	26	29	24	--	--	--
Not Important	60	59	50	54	46	61	--	--	--
Employer/Supervisor Influence									
Very Important	--	--	--	--	--	--	22	18	25
Somewhat Important	--	--	--	--	--	--	15	10	18
Not Important	--	--	--	--	--	--	63	72	57
Desire to Teach it to Others									
Very Important	34	26	37	33	30	37	44	39	48
Somewhat Important	30	27	32	31	32	30	27	28	26
Not Important	36	45	31	36	38	33	29	33	26
Teacher/Instructor/Counselor Influence									
Very Important	50	40	56	45	42	47	32	25	36
Somewhat Important	28	28	27	28	27	30	21	20	22
Not Important	22	32	17	27	31	23	47	55	42
To Cope with Personal/Family Problem									
Very Important	27	21	31	33	31	34	40	34	44
Somewhat Important	22	21	22	21	21	22	17	17	17
Not Important	51	58	47	46	48	44	43	49	39

Table 17 (continued)

Importance of Various Factors in Decision to Learn
By Age of Learner and Type of Learning[a]

Importance	Youths (Age 6-11)			Teens (Age 12-17)			Adults (18 years and older)		
	Total	Practical	Intellectual	Total	Practical	Intellectual	Total	Practical	Intellectual
Desire for Self-Accomplishment									
Very Important	74	73	76	80	78	82	75	73	77
Somewhat Important	20	20	20	15	17	13	16	18	14
Not Important	6	7	4	5	5	5	9	9	9
Just Interested in it									
Very Important	70	69	71	71	71	70	74	76	73
Somewhat Important	24	25	24	22	22	22	20	18	21
Not Important	6	6	5	7	7	8	6	6	6
Number of Sample Cases	1116	412	704	550	258	292	1542	603	939

[a] Analyses based on all sample members reporting some learning during the past year.

Table 18

Percentage of Persons Choosing People Versus Things as Initial Learning Resource By Age of Learner and Type of Learning[a]

Choice of Initial Learning Resource	Youths (Age 6-11)			Teens (Age 12-17)			Adults (18 years and older)		
	Total	Practical/ Recreational	Intellectual	Total	Practical/ Recreational	Intellectual	Total	Practical/ Recreational	Intellectu
Asked for help from another person	70%	74%	69%	61%	74%	50%	47%	56%	41%
Sought information from something other than people	30	26	31	39	26	50	53	44	59
Number of Sample Cases	1070	397	673	532	249	283	1494	587	907

[a] Analyses based on all sample members reporting some learning during the past year.

Table 19

Percentage of Persons Involving Others in Most Important Learning Activity By Age of Learner and Type of Learning[a]

Involvement of Others	Preschoolers (Age 2-5)			Youths (Age 6-11)			Teens (Age 12-17)			Adults (18 Years and Older)		
	Total	Practical	Intellectual	Total	Practical	Intellectual	Total	Practical	Intellectual	Total	Practical	Intellectual
Received help from others in household	90%	90%	90%	83%	77%	87%	71%	67%	74%	40%	40%	40%
Received help from others outside household	62	61	63	75	73	76	71	75	66	57	56	58
Household member(s) or friends learned along	58	68	54	69	73	66	65	70	61	51	56	47
Visited a library or bookmobile	47	42	49	62	42	74	55	47	62	43	36	47
Participated in a club, team, or organized group	20	24	18	42	59	32	46	55	37	--	--	--
- without a leader	--	--	--	--	--	--	--	--	--	24	21	26
- with a leader	--	--	--	--	--	--	--	--	--	39	35	43
Participated in formal classes with a teacher and others	30	27	30	52	42	58	54	49	58	45	37	49
Participated in individual lessons with an instructor only	10	9	11	22	24	20	26	26	25	21	22	21
Number of Cases	2248	638	1610	1112	412	700	549	256	293	1541	603	938

[a] Analyses based on all sample members reporting some learning during the past year.

As might be expected, 2-5 year olds and 6-11 year olds were more likely to have received help from other household members than from people outside the household, regardless of the type of learning involved. Teenage children were most likely to have received help from other household members for intellectual learning and from persons outside the household for practical/recreational learning, although substantial numbers of teenagers (i.e., more than two-thirds) indicated receiving help from each of these sources, regardless of the type of learning. Adults (who are probably the primary within-household resource for children) were substantially more likely to have received help from others outside the household (57 percent) than from other household members (40 percent) for both practical/recreational and intellectual learning activities.

Among pre-teen and teenage children, practical/recreational learning was substantially more likely than intellectual learning to have involved participation in a club, team, or organized group; on the other hand, for both groups of children (as well as for adults), intellectual learning was far more likely than practical/recreational learning to have involved participation in formal classes with other learners and a teacher. Intellectual learning was also substantially more likely than practical/recreational learning to have involved visiting a library or bookmobile, regardless of the age of the learner.

2. Use of Non-Human Resources

Respondents in each age group were asked to indicate the household resources, other than people, that they used to help them in their "most important (non-school) learning activity" of the past year. Estimates of percentages of persons using each of the various resources, given their availability, are presented in Table 20.

Although the types of learning activities selected as most important varied widely both within and across age groups, printed material (i.e., books and/or magazines) was the most frequently noted instructional resource for all age groups, with about four out of five learners in each age group having used such material. Television programs were substantially more likely to be used by 2-5 year olds (76 percent) and 6-11 year olds (66 percent) than by 12-17 year olds (54 percent) or adults (41 percent), which is not surprising considering the nature of most educational programming aired over television. Videocassettes, the other primary video resource, were also more likely to be

Table 20

Percentage of Persons Employing Various Educational Technologies/Resources in Their Most Important Learning Activity By Age of Learner and Type of Learning[a]

Type of Technology/ Resource Used	Preschoolers (Age 2-5)			Youths (Age 6-11)			Teens (Age 12-17)			Adults (18 Years and Older)		
	Total	Practical	Intellectual	Total	Practical	Intellectual	Total	Practical	Intellectual	Total	Practical	Intellectual
Books/Magazines	83% (2226)	70% (631)	89% (1595)	77% (1070)	55% (398)	90% (672)	77% (548)	67% (256)	85% (292)	81% (1519)	74% (592)	86% (927)
TV Programs	76 (2226)	72 (631)	77 (1595)	66 (1070)	61 (398)	69 (672)	55 (548)	55 (256)	55 (292)	41 (1519)	33 (592)	46 (927)
Videocassettes	28 (730)	37 (197)	25 (533)	24 (372)	20 (138)	26 (234)	24 (198)	26 (80)	22 (118)	17 (448)	10 (169)	21 (279)
Records	48 (1992)	43 (566)	50 (1426)	34 (975)	20 (370)	42 (605)	18 (510)	15 (243)	20 (267)	12 (1321)	10 (527)	14 (794)
Radio Programs	10 (2226)	10 (631)	9 (1595)	14 (1070)	14 (398)	14 (672)	18 (548)	17 (256)	20 (292)	20 (1519)	12 (592)	26 (927)
Audiocassettes	26 (1910)	21 (547)	27 (1363)	19 (965)	12 (361)	23 (604)	13 (514)	10 (241)	16 (273)	15 (1263)	10 (505)	19 (758)
Computers	40 (380)	42 (107)	40 (273)	37 (241)	18 (87)	48 (154)	37 (142)	15 (55)	52 (87)	26 (205)	12 (60)	32 (145)

[a] Analyses restricted to sample members in households with appropriate technology available and reporting some learning during the past year.

NOTE: Numbers in parentheses represent number of sample cases.

used by children (about one out of four) than by adults (about 17 percent) in their learning. The use of phonograph records for instruction was largely restricted to children, with almost half (48 percent) of the 2-5 year olds using records compared to about 12 percent of the adults. Audiocassettes were also more likely to be used for learning by young children (26 percent of 2-5 year olds, 19 percent of 6-11 year olds) than by teenage children (13 percent) or adults (15 percent). On the other hand, radio programs were more frequently cited by adults (20 percent) and teenagers (18 percent) than by 6-11 year olds (14 percent) or 2-5 year old children (10 percent). With regard to computers, when available, they were more likely to be used in the learning activities of children (about 40 percent of each age group) than in those of adults (26 percent).

This discussion should not blur the fact that substantial numbers of learners within each age group made no use of any technology in their most important learning. Use of technology was inversely related to age, with the percentage of persons indicating no use of technology in their learning being 15 percent of 2-5 year olds, 22 percent of 6-11 year olds, 32 percent of 12-17 year olds, and 43 percent of adults. When a particular technology was used it was most often used in conjunction with other technologies and/or printed material. This was especially true for young children, with almost half of the 2-5 year olds and nearly one-third of the 6-11 year olds using video and audio technologies as well as printed matter in their learning activities. However, about one in five teenagers and adults also employed this combination of resources in their learning activities.

Thus far the discussion has focused on use of household technologies/resources regardless of the nature of the most important learning activity involved. Since each of the technologies or learning resources under investigation cannot be considered equally useful for all of the learning activities reported by the respondents, a more informative picture of technology/resource usage may be obtained by restricting the examination to more similar types of learning activity within age grouping. Therefore, the learning activity selected by each respondent was again categorized as either practical/recreational or intellectual, and estimates of use of each of the technologies/resources were computed separately for each type of learning.[6] These estimates are also presented separately for each age group in Table 20.

[6] Unfortunately, while it is desirable to examine technology/resource usage within even more homogeneous categories of learning, further categorization was prohibited by limitations in the sample size.

While books/magazines are used by the majority of learners, regardless of type of learning or age of learner, they are an especially popular resource for intellectual types of learning. Roughly 9 out of 10 persons in each age group who engaged in intellectual learning activities used books and/or magazines to assist them in such learning. The findings are similar with regard to records and audiocassettes. Although both of these audio technologies were used by considerably smaller percentages of learners in all age groups, each group found substantially higher usage for intellectual than for practical/recreational learning activities. Radio program usage did not differ by type of learning activity for any of the three children's age groups; however, the percentage of adults using radio programs in intellectual learning activities was more than twice the percentage using such programs for practical/recreational learning. TV programs also were used rather consistently in both types of learning by all children, with slightly higher usage for intellectual learning; but the percentage of adults using TV programs was significantly higher for intellectual learning than for practical/recreational learning. Videocassette usage for each type of learning was inconsistent across age groups, with greater proportional use for practical/recreational learning among 2-5 year olds but for intellectual learning among adults. Finally, with the exception of 2-5 year olds (where no differences by learning type were observed), computers were almost three times as likely to have been used for intellectual learning activities as for practical/recreational learning.

The decision of whether or not to use a particular resource/technology in learning is, of course, constrained by the availability of that resource; but it also will depend on the learner's awareness of program material perceived to be helpful in his or her learning. Table 21 shows that more than four out of five adults and parents of preschool age children, and about 9 out of 10 pre-teens and teenage children, were aware of books and/or magazines that could have
been helpful in their most important learning activities. Awareness of helpful video program material was directly related to the age of the learner, with 86 percent of the parents of preschoolers indicating such awareness compared to 57 percent of adult learners. Awareness of helpful audio materials was substantially lower, although such awareness was indicated for about half of the pre-teens and two-thirds of the preschool age children. Reported awareness of helpful computer games/programs (among persons in computer-owning households) was also lowest for adults (36 percent) and highest for preschool-age children (58 percent).

Table 21
Percentage of Persons Who Were Aware
of Specific Materials That Were or
Could Have Been Helpful in Learning Activity
By Age Group[a]

Type of Learning Material/Resource	Age Group			
	Pre-Schoolers (Age 2-5)	Youths (Age 6-11)	Teens (Age 12-17)	Adults (18 Yrs. and Older)
Books/Magazines	88% (2226)	82% (1125)	83% (548)	87% (1519)
TV Programs or VCR Tapes	86 (2226)	74 (1125)	66 (548)	57 (1519)
Radio Programs, Records, or Audiocassettes	65 (2226)	51 (1125)	36 (548)	43 (1519)
Computer Programs	58 (380)	48 (252)	47 (141)	36 (205)

[a] Analyses based on all sample members with appropriate technology/resources available who reported some learning during the past year.

NOTE: Numbers in parentheses represent numbers of sample cases.

It is, perhaps, more interesting and informative to look at awareness in relation to use. Table 22 shows that the great majority (three-fourth or more) of persons in each age group who were aware of print, video, audio, or computer material that could have been helpful in their most important learning activity actually used such material in that learning.

E. Learner Attitudes and Perceptions

Since attitudes and perceptions, whether or not they are based in fact, can certainly influence the learner's decision to use or not to use available resource materials, learner attitudes and opinions regarding the actual or potential usefulness of various types of instructional resources and techniques were assessed and are presented in this section.

1. General Satisfaction with Learning

Over 95 percent of the learners within each age group indicated that they were very or somewhat satisfied with the amount that they had learned, regardless of the types of learning involved (Table 23). Indeed, most people in each age group indicated that they were "very satisfied" with their learning. Interestingly, teenagers and adults who learned practical/recreational activities were proportionately more likely than those who learned intellectual activities to have been very satisfied with their learning. However, such differences in satisfaction were not found for younger children or preschoolers.

Although these findings indicate general satisfaction on the part of almost all learners, they should not suggest that these learners feel that they followed the ideal learning strategy and would do nothing differently if they were to learn it over again. Indeed, most people indicated that they would do some things differently (Table 24). Thus, for example, more than 60 percent of the learners in each age group indicated that they would "try to get better feedback about progress along the way" and a similar proportion (about two-thirds) of parents/guardians of learners over six years old indicated that "more practice" would have been desirable. One-third or more of each age group indicated that they would "try to get more information before starting" and "try not to learn too much too fast," with proportionately more older children and adults having felt this way.

Table 22

Percentage of Learners who were Aware of Potentially Helpful Program Materials/Resources that Used Them in Their Most Important Learning by Age Group[a]

Type of Learning Resource Used	Age Group: Pre-Schoolers (Age 2-5)	Youths (Age 6-11)	Teens (Age 12-17)	Adults (18 Yrs. and Older)
Books/Magazines	94% (1967)	94% (902)	93% (452)	94% (1307)
TV Programs or VCR Tapes	91% (1898)	91% (805)	85% (360)	80% (842)
Radio Programs, Records, or Audiocassettes	83% (1429)	84% (550)	81% (197)	75% (630)
Computer Programs	70% (221)	76% (118)	81% (64)	73% (67)

[a] Analyses restricted to sample members who indicated awareness of specified technology/resource that could have been helpful in learning activity.

NOTE: Numbers in parentheses represent number of sample cases.

Table 23

Satisfaction with Learning
By Age of Learner and Type of Learning[a]

Level of Satisfaction	Preschoolers (Age 2-5)			Youths (Age 6-11)			Teens (Age 12-17)			Adults (18 Years and Older)		
	Total	Prac./ Recreational	Intellectual	Total	Prac./ Recreational	Intellectual	Total	Prac./ Recreational	Intellectual	Total	Prac./ Recreational	Intellectual
Very satisfied	71%	68%	73%	59%	60%	59%	52%	59%	47%	51%	59%	45%
Somewhat satisfied	27	29	26	37	37	38	44	38	49	45	38	49
Somewhat dissatisfied	2	3	1	3	2	3	3	3	2	4	2	5
Very dissatisfied	*	*	*	*	*	*	1	*	2	*	*	1
Number of Sample Cases	2232	632	1600	1108	412	696	546	255	291	1515	596	919

[a] Analyses based on all sample members reporting some learning during the past year.

* Represents a positive percentage less than 0.5.

Table 24

Percentage of Persons Reporting Things They Would Change
if They Were to Repeat Learning
By Age of Learner and Type of Learning[a]

Do Differently	Preschoolers (Age 2-5)			Youths (Age 6-11)			Teens (Age 12-17)			Adults (18 Years and Older)		
	Total	Practical	Intellectual	Total	Practical	Intellectual	Total	Practical	Intellectual	Total	Practical	Intellectual
Try to get more expert information	25%	24%	25%	43%	43%	43%	55%	53%	57%	55%	50%	58%
Practice more	44	46	44	66	73	61	68	70	65	66	66	66
Get more information before starting	39	38	39	46	45	46	55	54	55	55	53	56
Better feedback about progress along the way	61	64	60	62	64	60	70	68	71	63	59	65
Try not to learn too much too fast	33	33	33	42	45	40	49	49	49	46	45	47
Number of Sample Cases	2224	631	1593	1094	404	690	541	252	289	1517	592	925

[a] Analyses based on all sample members reporting some learning during the past year.

2. Attitudes Toward Learning Resources

Respondents, regardless of what resources they used or did not use in their most important learning activities, were asked to rate each of various non-human resources with regard to its actual (if used) or perceived (if not used) helpfulness in learning such skills or knowledges. The results indicate that while almost everyone was satisfied with the amount of learning that they had accomplished, their attitudes regarding the utility or potential utility of available resource materials are not nearly so positive. However, the reader should keep in mind that, in the case of children, it is the attitudes of parents regarding the utility of these resources for their children's learning that was assessed.

Table 25 shows the attitudes toward each learning resource, overall and with respect to practical/recreational and intellectual types of learning, for all four age groups. As can be seen, books/magazines (which were the most frequently used type of resource) were the most favorably rated learning resource by each age group. While such material was proportionately more likely to be perceived as "very helpful" for intellectual learning, regardless of age group, it was also rated as potentially being at least "somewhat helpful" by 80 percent or more of those engaged in practical/recreational learning. Television programs also received generally positive ratings with respect to their actual or potential utility for both types of learning, although attitudes toward television were most favorable for learning among 2-5 year olds and least favorable for adult learning. Within each age group, television was seen as equally helpful for both practical/recreational and intellectual kinds of learning.

Videocassettes, records, radio programs, audiocassettes, and computer games or programs were perceived as "not helpful" for more than half of all learners, regardless of age (except for records in the case of 2-5 year olds, where about one-third of the parents perceived such material as not helpful). Radio programs were considered the least potentially helpful of these resources, especially for learning by pre-teen and preschool-age children. Radio programs were most likely to have perceived utility for adult intellectual learning, although more than half of the adults who engaged in such learning rated such programs as not helpful. Records had somewhat more perceived utility for intellectual learning for 6-11 year olds, as did videocassettes for practical/recreational learning for 12-17 year olds. For all

Table 25

Attitude Toward Learning Resources
By Age of Learner and Type of Learning[a]

Perceived Helpfulness of Learning Resources	Preschoolers (Age 2-5)			Youths (Age 6-11)			Teens (Age 12-17)			Adults (18 Years and Older)		
	Total	Practical	Intellectual	Total	Practical	Intellectual	Total	Practical	Intellectual	Total	Practical	Intellectual
Books/Magazines												
Very Helpful	68%	53%	75%	56%	31%	71%	52%	41%	61%	62%	54%	68%
Somewhat Helpful	26	37	22	32	45	24	37	44	31	28	33	24
Not Helpful	6	10	3	12	24	5	11	15	8	10	13	8
TV Programs on a Regular Channel												
Very Helpful	40	36	41	29	26	32	27	28	25	23	20	25
Somewhat Helpful	35	33	36	40	43	38	39	43	36	33	32	34
Not Helpful	25	31	23	31	31	30	34	29	39	44	48	41
TV Programs on a Cable Channel												
Very Helpful	30	27	31	25	21	27	26	25	27	20	17	22
Somewhat Helpful	33	37	32	30	33	29	28	33	23	25	26	25
Not Helpful	37	36	37	45	46	44	46	42	50	55	57	53
Videocassettes												
Very Helpful	17	16	18	19	18	19	20	22	18	15	15	15
Somewhat Helpful	29	30	28	25	23	27	24	27	21	22	19	24
Not Helpful	54	54	54	56	59	54	56	51	61	63	66	61
Records												
Very Helpful	28	22	30	20	13	23	14	13	14	11	10	12
Somewhat Helpful	39	41	38	31	25	34	23	23	23	20	17	23
Not Helpful	33	37	32	49	62	43	63	64	63	69	73	65
Radio Programs												
Very Helpful	6	5	6	8	6	9	12	12	13	12	8	14
Somewhat Helpful	24	24	24	23	18	26	25	26	25	23	18	27
Not Helpful	70	71	70	69	76	65	63	62	62	65	74	59

Table 25 (continued)

Attitude Toward Learning Resources
By Age of Learner and Type of Learning[a]

Perceived Helpfulness of Learning Resources	Preschoolers (Age 2-5)			Youths (Age 6-11)			Teens (Age 12-17)			Adults (18 Years and Older)		
	Total	Prac-tical	Intellec-tual	Total	Prac-tical	Intellec-tual	Total	Prac-tical	Intellec-tual	Total	Prac-tical	Intellec-tual
Audiocassettes												
Very Helpful	20	16	22	14	10	17	15	12	18	14	11	16
Somewhat Helpful	28	28	29	27	22	30	24	28	20	21	17	24
Not Helpful	52	56	49	59	68	53	61	60	62	65	72	60
Computers												
Very Helpful	24	17	27	22	14	27	23	13	31	13	10	15
Somewhat Helpful	25	27	25	25	26	25	24	27	21	15	12	17
Not Helpful	51	56	48	53	60	48	53	60	48	72	78	68
Number of Sample Cases	2225	631	1594	1098	406	692	547	255	292	1498	588	910

[a] Analyses based on all sample members.

age groups, computers were proportionately more likely to be seen as helpful for intellectual learning than for practical/recreational learning.

Respondents were also asked to rate each of several different ways of obtaining information, or modes of instruction, with regard to its usefulness generally for practical/recreational and intellectual types of learning. The results of this inquiry are presented in Table 26. Again, the reader is cautioned to keep in mind that in the case of children it was the perceptions of parents/guardians regarding the utility of these instructional techniques for their children's learning that were assessed. Although each of the instructional modes listed in Table 26 were rated at least "somewhat useful" by (or for) three-fourths of all learners, regardless of age or type of learning being considered, some insight into the perceived relative effectiveness of these different techniques may be obtained by restricting our examination to the "very useful" and "not useful" ratings. For example, "talking with someone knowledgeable" was endorsed as very useful by (or for) more than seven of ten learners, regardless of age group or type of learning. "Watching a live demonstration" and "Trial and Error" received similarly positive endorsements for their utility in learning, although within each age group each of these techniques was especially likely to be considered very useful for practical/recreational types of learning. Only for "lectures" and "reading words," and only for 2-5 year old children, were substantial percentages (i.e., 20 percent or more) of "not useful" ratings obtained, although "looking at (still) pictures" and "watching motion pictures" was less likely to have been perceived as useful by adults than for young children.

The perceived importance of various "contextual" factors in learning, regardless of types, was also assessed. Table 27 shows that the perceived importance of "getting feedback" and "getting encouragement" along the way was directly related to the learner's age, with both factors having received ratings of "very important" for about nine out of ten 2-5 year olds as compared to such ratings for about two-thirds of adults. Interestingly, adult females were proportionately more likely to have indicated that "getting encouragement" was very important than were adult males (70 percent versus 58 percent, respectively). The perceived importance of "having another person involved in the learning" was less clearcut, with roughly one-third of each age group feeling that it is "very important" and about one-quarter feeling that it is "not important."

Table 26
Perceived Usefulness of Various Modes of Instruction[a]
By Age of Learner and Type of Learning

Usefulness Rating	Preschoolers (Age 2-5)		Youths (Age 6-11)		Teens (Age 12-17)		Adults (18 years and older	
	Practical/ Recreational	Intellectual	Practical/ Recreational	Intellectual	Practical/ Recreational	Intellectual	Practical/ Recreational	Intellectu
Talking with Someone Knowledgeable								
Very Useful	83%	84%	79%	78%	78%	76%	74%	72%
Somewhat Useful	15	14	19	20	21	22	22	24
Not Useful	2	2	2	2	1	2	4	4
Listening to Someone (Lectures)								
Very Useful	41	47	45	52	48	55	48	59
Somewhat Useful	38	38	43	41	44	39	43	35
Not Useful	21	15	12	7	8	6	9	6
Looking at Pictures (Still)								
Very Useful	67	73	60	63	51	48	48	45
Somewhat Useful	29	24	34	33	40	45	40	44
Not Useful	3	3	6	4	9	7	12	11
Reading Words								
Very Useful	47	56	58	68	55	64	55	71
Somewhat Useful	26	19	35	27	36	31	39	26
Not Useful	27	25	7	5	9	5	6	3
Watching Motion Pictures								
Very Useful	45	45	47	43	43	41	37	35
Somewhat Useful	45	44	41	45	43	46	45	46
Not Useful	10	11	12	12	14	13	18	19
Watching a Live Demonstration								
Very Useful	77	73	83	78	81	74	77	67
Somewhat Useful	19	23	14	19	17	24	19	28
Not Useful	4	4	2	3	2	2	4	5
Trial and Error (Actual Practice)								
Very Useful	81	75	82	75	83	74	76	67
Somewhat Useful	17	22	16	22	14	22	20	26
Not Useful	2	3	2	3	3	4	4	7
Number of Sample Cases	2209	2206	1099	1097	542	540	1618	1609

[a] Analyses based on all sample members.

Table 27

Perceived Importance of Various Contextual Factors in Learning
By Age and Sex of Learner[a]

Importance Rating	Preschoolers (Age 2-5)			Youths (Age 6-11)			Teens (Age 12-17)			Adults (18 Years and Older)		
	Total	Males	Females	Total	Males	Females	Total	Males	Females	Total	Males	Females
Having Another Person Involved												
Very Important	37%	38%	37%	39%	40%	37%	42%	42%	42%	37%	38%	36%
Somewhat Important	38	37	39	39	38	40	35	37	34	33	32	33
Not Important	25	25	25	22	22	23	23	21	24	30	30	31
Getting Feedback												
Very Important	88	89	86	85	82	87	78	79	77	69	70	68
Somewhat Important	10	10	12	14	16	12	20	20	20	26	25	26
Not Important	2	2	2	1	2	1	2	1	3	5	5	6
Getting Encouragement												
Very Important	94	93	94	93	90	94	87	87	87	65	58	70
Somewhat Important	5	5	5	6	8	5	12	12	11	27	32	23
Not Important	1	2	1	1	2	1	1	1	2	8	10	7
Number of Sample Cases	2202	1188	1014	1099	543	556	542	289	253	1614	713	901

[a] Analyses based on all sample members.

III. SUMMARY

Most people, regardless of age, engaged in a wide variety of informal, or non-school, learning activities during the one-year period preceding this survey. According to parents/guardians, virtually all children (over two years of age) engaged in practical/recreational and intellectual learning apart from school work or assignments, whereas about one in ten adults were unable to recall or had not engaged in any such learning during the year. The likelihood of informal learning among adults was related to both family income and age. Almost all adults 18-25 years of age cited some informal learning during the year as did 97 percent of adults in the highest family income category (over $40,000 per year); on the other hand, 14 percent of those over 44 years old and a similar percentage (12 percent) of low income adults (family income under $10,000) reported no such learning experience.

Adults also reported fewer different types of learning than were reported for children. According to parents/guardians, children of all ages engaged in an average of more than 15 different types of non-school learning experiences during the year, with preschool age children averaging even more (about 18) such experiences; in contrast, adults reported substantially fewer learning experiences, averaging about eight different activities. Again, for adults, the average number of learning experiences reported was directly related to family income level, with the highest income adults reporting about 11 different experiences on the average.

While relatively few sex differences were observed in the types of learning activities among 2-5 year olds, evidence of sex role socialization became increasingly clearcut with 6-11 year olds, 12-17 year olds, and adults. Thus, girls 6-11 years old were more likely than boys the same age to have learned music, dance/theatre, writing, foreign language, and poetry, while 6-11 year old boys were more likely to have learned about camping/outdoor survival, science, and computers. Among teenagers, females were substantially more likely than males to have been learning crafts, child care, poetry, family development, and the like; teenage males were more likely than females to have learned sports, camping/outdoor survival, driving a car, and computers. Games and crafts were the only two areas for which adult females were more likely than adult males to have been involved; adult males, on the

other hand, were much more likely to have learned about household maintenance, camping/outdoor survival, business/jobs/personal finance, science, math, and computers.

Regardless of age group or sex, more learners considered an intellectual type of learning activity as their most important than a practical/recreational activity, with one exception: While teenage females were more likely to have selected an intellectual activity as the most important learning (63 percent), teenage males were more likely to have selected a practical/recreational activity (56 percent). Among those for whom intellectual learning was the most important, "reading" was by far the most frequently mentioned activity for 2-5 and 6-11 year olds, while the distribution of intellectual activities selected as most important for teenagers and adults demonstrated considerable diversity. "Social skills" (e.g., manners, getting along with others) and "sports/motor skills" accounted for almost three-fourths of the 2-5 year old learners for whom practical/recreational learning activities were chosen as most important. Sports/motor skills was also the most frequently named most important practical/recreational learning type for 6-11 year olds, 12-17 year olds, and adults (although, again, adults exhibited substantial diversity in the practical/recreational activities selected as most important).

"Family involvement" emerged as the most frequently cited reason for both children and adults becoming aware of or interested in their most important learning activity, regardless of whether the activity was practical/recreational or intellectual in nature. "Friends involvement" was substantially more likely to have been cited as the impetus for practical/recreational than for intellectual learning, whereas just the reverse was found with regard to "school or course work/activities." Substantial numbers of adults reported having first become aware of/interested in the activity as a result of some "personal" experience. The desire for self-accomplishment, interest in the activity, and family influence/support all emerged as important factors contributing to the decision to learn among children and adults.

After deciding to learn, the majority (about 70 percent) of pre-teen age children began their most important non-school learning by asking for help from another person, presumably a parent or other relative. Teenagers and adults were also more likely to have sought help initially from another person, if the learning activity was practical/recreational in nature; for

intellectual learning, however, teenagers were equally likely, and adults more likely, to have begun by seeking information from something other than people (e.g., books, course offerings).

Regardless of how they began or the type of learning involved, 2-5 year olds and 6-11 year olds were more likely to have received help from other household members than from people outside the household. Other household members were also quite likely to have provided assistance in the learning of teenagers. Not surprisingly, adults (who are the primary within-household learning resources for children) were more likely to have received help from persons outside the household (57 percent) than from other household members (40 percent).

Books/magazines were the most frequently used non-human learning resource by all age groups, with almost four out of five learners having used such material. Use of technology (i.e., audio, video, or computers) in learning was inversely related to age, with the percentage of persons indicating no use of any technology in their most important learning being 15 percent of 2-5 year olds, 22 percent of 6-11 year olds, 32 percent of 12-17 year olds, and 43 percent of adults. Television programs, videocassettes, audiocassettes, phonograph records, and computer games or programs were all more likely to be used for learning by young children than by older children who, in turn, were more likely to use such materials than were adults. The reverse was true of radio programs, however, which were more frequently used for learning by adults and teenage children than by children under 12 years of age.

Not surprisingly, the type of learning involved was found to be related to the likelihood of using a particular resource. Books/magazines, records, audiocassettes, and computers were substantially more likely to be used for intellectual learning than for practical/recreational learning by children and adults. Radio and television program usage by children was rather consistent for both types of learning, but the percentages of adults using radio and/or TV programs were significantly higher for intellectual learning than for practical/recreational learning. Videocassette usage for each type of learning was not consistent across age groups, with greater proportional use for practical/recreational learning among 2-5 year olds and for intellectual learning among adults.

Use of a particular resource is frequently based on conscious decision-making rather than happenstance; and, therefore, it is contingent on awareness as well as availability. Regardless of the age of the learner, more than four out of five persons indicated awareness of specific books and/or magazines that could have been helpful in their learning. Awareness of helpful video program material was related to the age of the learner, with almost nine out of ten parents of preschool-age children indicating such awareness. Although substantially lower for all groups, awareness of helpful audio material and computer games or programs was similarly related to learner's age. Most persons (three-fourths or more) in each age group who (or who's parents) were aware of print, video, audio, or computer program material that could have been helpful in their learning actually used such material.

Finally, this study found that the great majority (over 95 percent) of learners within each age group were satisfied with the amount that they had learned, regardless of type of learning involved. Nonetheless, most people indicated that they would do some things differently if they were to begin learning all over again. Specifically, more than 60 percent of the learners in each age group indicated that they would "try to get better feedback about progress along the way" and one-third or more indicated that they would "try to get more information before starting" and "try not to learn too much too fast."

While almost everyone was satisifed with the amount of learning they had accomplished, attitudes regarding the utility or potential utility of available resources were not nearly so positive. Books/magazines and television programs received generally favorable ratings with respect to their actual or potential utility, regardless of learner age. In contrast, videocassettes, records, radio programs, audiocassettes, and computer games or programs were perceived as "not helpful" for more than half of all learners, regardless of age, with one exception: Phonograph records were perceived as "somewhat" or "very helpful" by about two-thirds of the parents of 2-5 year olds.

Appendix A

HITS Interview Items
(All Age Groups)

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(All Age Groups)

This appendix provides the contents of the four HITS survey interviews (one for each age group). Most questions are essentially the same for each age group and are asked in the same order. Some variation existed because not all questions were appropriate for all age groups and because children were not interviewed directly.

Survey (A) - solicits information about sampled 2-5 year olds from the parent or guardian. Since learning by 2-5 year olds is primarily other-directed, items in this interview were addressed to the parent/guardian as teacher.

Survey (B) & (C) - solicit information about 6-11 year olds and 12-17 year olds, respectively. In these interviews, the parent/guardian was asked to serve as a "proxy" respondent for the sampled child.

Survey (D) - solicits information about adults (18 year olds and older). All questions were posed directly to the sampled adult.

For clarity and ease of review the four surveys have been collapsed into the following composite. Questions are arranged in the order in which they were asked, the survey(s) in which the question appears is indicated, and changes in wording are indicated where necessary.

Survey - Age Group -	A 2-5	B 6-11	C 12-17	D 18+

We are interested in the learning resources people use to help themselves, such as books, magazines, TV, home computers, etc.

1.	Do you have a television in your household? 1=Yes 2=No (skip to Q.4)	X	X	X	X
2.	Do you have cable TV? 1=Yes 2=No	X	X	X	X
3.	About how many hours of television does _ [(D) (do you)] watch:				
	a. on a typical weekday, including the evening? [Enter number of hours--Range: 00-24]	X	X	X	X
	b. on a typical weekend day (Saturday or Sunday), including evenings? [Enter number of hours--Range: 00-24]	X	X	X	X
4.	Is there a video cassette player or VCR in your home? 1=Yes 2=No	X	X	X	X
5.	Not counting electronic games, does anyone in your household own a personal or home computer? 1=Yes 2=No (skip to Q.13)	X	X	X	X
6.	What kind of personal computer do you have? [Record make/model--Limit of 20 characters]	X	X	X	X
7.	Does the computer have a:				
	a. Printer? 1=Yes 2=No	X	X	X	X

		A	B	C	D
b.	Disk drive(s)?	X	X	X	X
	1=Yes 2=No				
c.	Monitor or screen (other than TV set)?	X	X	X	X
	1=Yes 2=No				
d.	Modem that allows you to dial up other computers?	X	X	X	X
	1=Yes 2=No				
*8.	At home, is the computer used (does _ use the computer) for:				
a.	Entertainment, such as video games?	X	X	X	X
	1=Yes 2=No				
b.	Specific class assignments? [(A) (for students?)]	X	X	X	X
	1=Yes 2=No				
c.	Word processing or text editing?	X	X	X	X
	1=Yes 2=No				
d.	Learning about computers?	X	X	X	X
	1=Yes 2=No				
e.	Doing original [(B)(C) (_'s own)] [(D) (your own)] programming?	X	X	X	X
	1=Yes 2=No				
f.	Job or business-related tasks?	X			X
	1=Yes 2=No				

* Values reordered

		A	B	C	D
g.	Household record-keeping, taxes, etc.?	X			X
	1=Yes 2=No				
h.	Any other uses?	X	X	X	X
	1=Yes 2=No				
9.	About how many hours per week is the computer used with _ (does _ use the computer at home, do you use the computer at home)?	X	X	X	X
	1=None 2=Less than 1 hour 3=1-5 hours 4=6-10 hours 5=11-15 hours 6=16-20 hours 7=More than 20 hours				
10.	What kinds of educational software do you have for the home computer? That is, programs designed for helping people learn? Do you have . . .				
a.	spelling?	X	X	X	X
	1=Yes 2=No				
b.	math?	X	X	X	X
	1=Yes 2=No				
c.	educational games (such as chess)?	X	X	X	X
	1=Yes 2=No				
d.	reading?	X	X	X	X
	1=Yes 2=No				
e.	computer basics (such as how to use computers)?	X	X	X	X
	1=Yes 2=No				

		A	B	C	D
f.	graphics? 1=Yes 2=No	X	X	X	X
g.	any others? 1=Yes 2=No	X	X	X	X
11.	What other kind of educational software do you have for your home computer? [Enter response below--limit of 20 characters]	X	X	X	X
*12.	Do you or your family use the computer more, less, or about the same as you thought you would at the time you bought it? Do you use it . . .				
a.	overall (for all uses)? 1=More 2=About the same 3=Less	X	X	X	X
b.	for educational uses? 1=More 2=About the same 3=Less	X	X	X	X
c.	for personal/family finances? 1=More 2=About the same 3=Less	X	X	X	X
d.	for word processing? 1=More 2=About the same 3=Less	X	X	X	X
e.	for games for entertainment? 1=More 2=About the same 3=Less	X	X	X	X

*Values reordered

	A	B	C	D
f. for business uses at home?			X	X
1=More 2=About the same 3=Less				
13. Does anyone in your household have a record player or stereo that plays records?	X	X	X	X
1=Yes 2=No				
14. Is there a cassette tape player in your home or car?	X	X	X	X
1=Yes 2=No				
15. Is it a portable tape player, an automobile tape player, or part of a home sound system?	X	X	X	X
[Record all that apply]				
1=Portable 2=Auto 3=Home system				
16. Does anyone in your household:				
a. get a daily newspaper?	X	X	X	X
1=Yes 2=No				
b. subscribe to a book club?	X	X	X	X
1=Yes 2=No				
c. subscribe to a magazine?	X	X	X	X
1=Yes 2=No				
d. have an encyclopedia or other reference books?	X	X	X	X
1=Yes 2=No				

	A	B	C	D
17. During the past year, have you participated in any training or educational programs, whether voluntary or as work-related requirements, that were provided by:				X
a. Your employer/company 1=Yes 2=Yes, required 3=No				X
b. Other business organization/company 1=Yes 2=Yes, required 3=No				X
c. The mass media (a TV course, for example) 1=Yes 2=Yes, required 3=No				X
d. Community service organizations (church, charity groups, etc.) 1=Yes 2=Yes, required 3=No				X
e. Other organizations/agencies (such as labor unions, professional associations) 1=Yes 2=Yes, required 3=No				X
18. You said that you had participated in a training or educational program provided by your employer/company. Approximately how many total days during the past year were you in training or educational programs offered by your employer or company? (Enter total number of days [range:001-366].)				X

	A	B	C	D
19. For the most recent of these programs (provided by your employer or company) did you personally have to pay any training fees? 1=Yes 2=No				X
20. You said that you had participated in a training or educational program provided by a business organization/ company other than your employer. Approximately how many total days during the past year were you in training or educational programs offered by a business organization/company other than your employer? (Enter total number of days [range:001-366].)				X
21. For the most recent of these programs (provided by a business organization/company other than your employer), did you personally have to pay any training fees? 1=Yes 2=No				X
22. You said that you have participated in a training or educational program provided by the mass media. Approximately how many total days during the past year were you in training or educational programs offered by the mass media? (Enter total number of days [range:001-366].)				X
23. For the most recent of these programs (provided by the mass media), did you personally have to pay any training fees? 1=Yes 2=No				X
24. You said that you have participated in a training or educational program provided by community service organizations.				X

		A	B	C	D
	Approximately how many total days during the past year were you in training or educational programs offered by community service organizations?				
	(Enter total number of days [range:001-366].)				
25.	**For the most recent of these programs (provided by community service organizations), did you personally have to pay any training fees?**				X
	1=Yes 2=No				
26.	**You said that you have participated in a training or educational program provided by other organizations/agencies.**				X
	Approximately how many total days during the past year were you in training or educational programs offered by other organizations/agencies?				
	(Enter total number of days [range:001-366].)				
27.	**For the most recent of these programs (provided by other organizations/agencies), did you personally have to pay any training fees?**				X
	1=Yes 2=No				
*28.	As I said earlier, we are interested in the kinds of things _ learns informally outside school. [(C) (people choose to learn)]. These may be both recreational or practical learning (that is, learning how to do something and applying it) and intellectual learning (that is, acquiring skills and knowledge for their own sake).	X	X	X	X
	(A)(B)(C) During the past year, have you or anyone else in your household decided to help _ learn more about any recreational activities or practical skills? That is, in the past year, has _ learned any:	X	X	X	
	(D) During the past year, have you tried to learn more about any recreational activities, hobbies, or practical skills in addition to any school or work requirements? That is, in the past year, have you learned any:				X

* Values reordered

	A	B	C	D
a. Sports/motor skills	X	X	X	X
[# of activities]				
b. Games	X	X	X	X
[# of activities]				
c. Art	X	X	X	X
[# of activities]				
d. Music	X	X	X	X
[# of activities]				
e. Dance/theatre	X	X	X	X
[# of activities]				
f. Household chores [(D) (Maintenance)]	X	X	X	X
[# of activities]				
g. Camping/hiking/outdoor survival	X	X	X	X
[# of activities]				
h. Crafts		X	X	X
[# of activities]				
i. Business/jobs[(B) (paper route)]		X	X	X
[# of activities]				
j. Child care			X	X
[# of activities]				
k. Driving a car			X	X
[# of activities]				
l. First aid/lifesaving			X	X
[# of activities]				
m. Social skills	X			
[# of activities]				

		A	B	C	D
	n. Tax preparation				X
	[# of activities]				
29.	Were there recreational or practical activities other than those we have already discussed? 1=Yes 2=No (skip to Q.31)	X	X	X	X
30.	Please specify any other recreational/ practical activities [Limit of 64 characters]	X	X	X	X
*31.	Now, let us turn to the other learning area--that is, intellectual learning.	X	X	X	X
	(A) During the past year, have you or anyone in your household tried to help _ learn more about...	X			
	(B)(C)(D) In addition to any school work or assignments, during the past year, has _ tried to learn more about:		X	X	X
	a. Science? 1=Yes 2=No	X	X	X	X
	b. Reading? 1=Yes 2=No	X	X	X	X
	c. Writing? 1=Yes 2=No	X	X	X	X
	d. Foreign language? 1=Yes 2=No	X	X	X	X
	e. Social relationships? 1=Yes 2=No	X	X	X	X

* Values reordered

		A	B	C	D
f.	Health/hygiene/safety? 1=Yes 2=No	X	X	X	X
g.	Animals/nature? 1=Yes 2=No	X	X	X	X
h.	Math [(A) (numbers/counting/arithmetic)]? 1=Yes 2=No	X	X	X	X
i.	Religion? 1=Yes 2=No	X	X	X	X
j.	Career exploration? [(A) (awareness) (that is, different things people do for a living)]? 1=Yes 2=No	X	X	X	X
k.	Family development? [(A)(relationships)]? 1=Yes 2=No	X	X	X	X
l.	Computers? 1=Yes 2=No	X	X	X	X
m.	Sex education [(A) (awareness)]? 1=Yes 2=No	X	X	X	
n.	Civics/government? 1=Yes 2=No		X	X	X
o.	History? 1=Yes 2=No		X	X	X

		A	B	C	D
p.	Geography? 1=Yes 2=No		X	X	X
q.	Nursery rhymes/fairy tales? 1=Yes 2=No	X	X		
r.	Poetry? 1=Yes 2=No			X	X
s.	Speech? 1=Yes 2=No	X			
t.	Local directions [(A) (how to find way around neighborhood)]? 1=Yes 2=No	X			
32.	Were there intellectual activities other than those that we have already discussed? 1=Yes 2=No (skip to Q.34)	X	X	X	X
33.	Please specify any other intellectual activities [Limit of 64 characters]	X	X	X	X
*34.	Considering both the recreational or practical and the intellectual activities you have mentioned, which of these learning activities would you say was most important--that is, the activity [(A) (learning)] on which _ [(D) (you)] spent the most time, or perhaps the one you think produced the biggest change in _'s [(D) (your)] life. [(A) (Please choose an activity in which you personally were involved in helping __ learn.)] 01=Sports 02=Games	X X	X X	X X	X X

* Values reordered

	A	B	C	D
03=Art	X	X	X	X
04=Music	X	X	X	X
05=Dance/theatre	X	X	X	X
06=Doing things around the home	X	X	X	X
07=Camping/hiking/outdoor survival	X	X	X	X
08=Other recreational activity	X	X	X	X
09=Science	X	X	X	X
10=Reading	X	X	X	X
11=Writing	X	X	X	X
12=Foreign language	X	X	X	X
13=Social relationships	X	X	X	X
14=Animals/nature study	X	X	X	X
15=Math	X	X	X	X
16=Religion	X	X	X	X
17=Health/hygiene/safety	X	X	X	X
18=Computers	X	X	X	X
19=Other intellectual activity	X	X	X	X
20=None mentioned	X	X	X	X
21=Sex education	X	X	X	
22=Crafts		X	X	X
23=Business/jobs		X	X	X
24=Civics/government		X	X	X
25=History		X	X	X
26=Geography		X	X	X
27=Career exploration		X	X	X
28=Family development		X	X	X
29=Nursery rhymes/fairy tales	X	X		
30=Child care			X	X
31=Driving a car			X	X
32=First aid/lifesaving			X	X
33=Poetry			X	X
34=Social Skills	X			
35=Career awareness	X			
36=Family relationships	X			
37=Speech	X			
38=Local directions	X			
39=Tax Preparation				X

35. Do you think _ would agree that _ was the most important for _, or would you say _ would have chosen another activity? — B, C

1=Yes, would agree (skip to Q.37)
2=No, would not agree

36. Which activity would _ have chosen? — B, C

	B	C
01=Sports	X	X
02=Games	X	X
03=Crafts	X	X
04=Art	X	X

* Values reordered

	A	B	C	D
05=Music		X	X	
06=Dance/theatre		X	X	
07=Doing things at home		X	X	
08=Camping/hiking		X	X	
09=Business/jobs		X	X	
10=Other recreational activity		X	X	
11=Science		X	X	
12=Reading		X	X	
13=Writing		X	X	
14=Foreign language		X	X	
15=Social relationships		X	X	
16=Civics/government		X	X	
17=History		X	X	
18=Geography		X	X	
19=Animals/nature study		X	X	
20=Math		X	X	
21=Religion		X	X	
22=Career exploration		X	X	
23=Family development		X	X	
24=Sex education		X	X	
25=Health/hygiene/safety		X	X	
26=Computers		X	X	
27=Other intellectual activity		X	X	
28=Nursery rhymes		X		
29=Child care			X	
30=Driving a car			X	
31=First aid/lifesaving			X	
32=Poetry			X	
37. When you decided to help _ learn about _, would you tell me whether each of the following reasons was "very important," "somewhat important," or "not important."	X			
You read that it was time for _ to learn it.	X			
1=Very important 2=Somewhat important 3=Not important				
You heard on TV/radio that it was time for _ to learn it.	X			
1=Very important 2=Somewhat important 3=Not important				
Other family members/relatives suggested to you that _ learn it.	X			
1=Very important 2=Somewhat important 3=Not important				

	A	B	C	D
Friends suggested to you that _ learn it.	X			
1=Very important 2=Somewhat important 3=Not important				
_ asked you to help _ learn it.	X			
1=Very important 2=Somewhat important 3=Not important				
A recent experience _ had suggested to you that there was a need.	X			
1=Very important 2=Somewhat important 3=Not important				
Day care/pre-school staff recommended that you help _ learn it.	X			
1=Very important 2=Somewhat important 3=Not important				
You noticed that other children _'s age had learned or begun learning it.	X			
1=Very important 2=Somewhat important 3=Not important				
38. (B)(C) How do you think _ first became aware of and interested in _? Do you think it was: (D) How did you first become aware of and interested in _? Do you think it was:		X	X	X
1=through family involvement or observation of family members.		X	X	X
2=through friends' involvement.		X	X	X
3=by reading about it in a book, magazine, or newspaper.		X	X	X
4=through other media (radio, TV, or movies).		X	X	X
5=by watching a live performance/demonstration.		X	X	X
6=through school or course work/activities.		X	X	X
7=through job or business-related activities.				X
8=the result of a family purchase, or.		X	X	X
9=some other "personal" experience?		X	X	X

		A	B	C	D
39.	Please indicate whether you think each of the following factors was "very important," "somewhat important," or "not important" in _'s [(D) (your)] decision to try to learn _:		X	X	X
	a. Family influence/support		X	X	X
	1=Very important 2=Somewhat important 3=Not important				
	b. Friends influence/involvement		X	X	X
	1=Very important 2=Somewhat important 3=Not important				
	c. Role model in the media (sports hero, famous entertainer)		X	X	
	1=Very important 2=Somewhat important 3=Not important				
	d. Employer/supervisor influence				X
	1=Very important 2=Somewhat important 3=Not important				
	e. Wanting to be able to teach someone else		X	X	X
	1=Very important 2=Somewhat important 3=Not important				
	f. Teacher/instructor's influence		X	X	X
	1=Very important 2=Somewhat important 3=Not important				
	g. Cope with a personal or family crisis or problem		X	X	X
	1=Very important 2=Somewhat important 3=Not important				

		A	B	C	D
h.	Desire for self-accomplishment		X	X	X
	1=Very important 2=Somewhat important 3=Not important				
i.	Just interested in it		X	X	X
	1=Very important 2=Somewhat important 3=Not important				
40.	So far, how much time altogether [(D) (have you)] has __ spent learning _? Would you say. . . 1=less than 1 day? 2=more than 1 day but less than 1 week? 3=more than 1 week but less than a month? 4=more than a month?	X	X	X	X
41.	(A) Did anyone else in your household help [(D) (you)] _ with this learning in any way? . . . [(B)(C)(D) (including suggesting resources (books/magazines, TV programs, classes/courses, instructors) you could use)]? 1=Yes 2=No	X	X	X	X
42.	Who were the persons in your household who assisted?	X	X	X	X
a.	Spouse? 1=Yes 2=No				X
b.	Son/daughter? 1=Yes 2=No				X
c.	Parent/guardian? 1=Yes 2=No	X	X	X	
d.	Brother/sister? 1=Yes 2=No	X	X	X	

		A	B	C	D
e.	Other relatives? 1=Yes 2=No	X	X	X	X
f.	Other? 1=Yes 2=No	X	X	X	X
43.	How did you help _ in the learning activity? Did you . . . (D) How did these people help you in the learning activity? Did they . . .	X	X	X	X
a.	recommend people who could help or sources of information? 1=Yes 2=No		X	X	X
b.	give instruction/work together? 1=Yes 2=No	X	X	X	X
c.	encourage/give moral support? 1=Yes 2=No	X	X	X	X
d.	pay for classes, books, or other materials? 1=Yes 2=No	X	X	X	X
e.	provide transportation? 1=Yes 2=No	X	X	X	X
f.	provide other assistance? 1=Yes 2=No	X	X	X	X
44.	Did anyone outside your household help with this learning, such as by coaching, giving guidance, or helping to locate resources? 1=Yes 2=No (skip to Q.46)	X	X	X	X

		A	B	C	D
45.	Was it a:				
	a. (B)(C)(D) teacher/instructor/counselor? [(A) (day care or preschool staff?)] 1=Yes 2=No	X	X	X	X
	b. (A) neighbor/babysitter? [(B)(C)(D) (family friend?)] 1=Yes 2=No	X	X	X	X
	c. group leader (church or scout leader, coach?)? 1=Yes 2=No	X	X	X	X
	d. grandparent(s)? 1=Yes 2=No	X	X	X	
	e. son or daughter? 1=Yes 2=No				X
	f. other relative(s)? 1=Yes 2=No	X	X	X	X
	g. colleagues/business associates? 1=Yes 2=No				X
	h. (A) (B) _'s friends? [(C) (Peers)?] 1=Yes 2=No	X	X	X	
46.	Did anyone else in your household or any of _'s [(D) (your)] friends, try to learn along with _? [(D) (you)?] 1=Yes 2=No	X	X	X	X

		A	B	C	D
47.	(A) When you decided to help _ learn _ how did you begin? (B)(C) When _ decided to learn did _ first . . . (D) When you decided to learn _ did you first . . .	X	X	X	X
	a. ask for help from another person?	X	X	X	X
	1=Yes 2=No				
	b. seek information from something other than people (such as books/magazines, course offerings, etc.)?	X	X	X	X
	1=Yes 2=No				
	c. just start out to see what you could do without further help or information?	X			
	1=Yes 2=No				
48.	Did [(A) (_'s)] learning this activity also involve _ participation in:				
	a. a [(D) (study group)] club, team, or organized group of some kind?	X	X	X	X
	1=Yes 2=No				
	b. an organized group or team with a designated leader (coach)?				X
	1=Yes 2=No				
	c. formal classes or courses with a teacher and other learners?	X	X	X	X
	1=Yes 2=No				
	d. individual lessons with a teacher or instructor only?	X	X	X	X
	1=Yes 2=No				

		A	B	C	D
49.	(A) How satisfied are you that _ is learning or has learned as much as you wanted _ to learn? Would you say . . . (B)(C) How satisfied would you say _ is that _ is learning or has learned as much as _ wanted to learn? Would you say . . . (D) How satisfied are you that you are learning or have learned as much as you wanted to learn? Would you say . . . 1=very satisfied, 2=somewhat satisfied, 3=somewhat dissatisfied, or 4=very dissatisfied?	X	X	X	X
50.	We would also like to know whether _ [(D) (you)] might do anything differently in [(A) (helping _ in)] the future. For each of the following statements, would you tell me whether you agree or disagree? If [(A) (we)] [(D) (I)] _ had it to do over again, [(A) (I)] _ would probably: . . .	X	X	X	X
	a. try to get more expert instruction for _. 1=Yes 2=No	X	X	X	X
	b. [(A) (make _)] practice more (more doing rather than watching or listening). 1=Yes 2=No	X	X	X	X
	c. get more information before starting. [(A) (to teach _.)] 1=Yes 2=No	X	X	X	X
	d. try to get better feedback [(D) (about my)] to _ about _'s progress along the way. 1=Yes 2=No	X	X	X	X

		A	B	C	D
e.	try not to learn [(A) (teach _)] so much so fast. 1=Yes 2=No	X	X	X	X
51.	What household resources other than people were used to help _ [(D) (you)] learn this activity? Did _ [(D) (you)] use...	X	X	X	X
a.	[(A) (children's)] books/magazines? [(B) (C)(D) (or newspaper articles?)] 1=Yes 2=No	X	X	X	X
b.	Television programs? 1=Yes 2=No	X	X	X	X
c.	Videocassettes? 1=Yes 2=No	X	X	X	X
d.	Records? 1=Yes 2=No	X	X	X	X
e.	Radio programs? 1=Yes 2=No	X	X	X	X
f.	Audiocassettes? 1=Yes 2=No	X	X	X	X
g.	Picture puzzles? 1=Yes 2=No	X			
h.	Toys? 1=Yes 2=No	X			

		A	B	C	D
i.	Computer games or programs? 1=Yes 2=No	X	X	X	X
52.	Did you or anyone in your household read to _ in helping _ learn _? 1=Yes 2=No	X			
53.	(A)(B) Did you visit a library or bookmobile with _ or borrow books, records, tapes, or computer games or programs from a library to help _ to learn _? (C)(D) Did _ [(D) (you)] visit a library or bookmobile, or borrow books, records, tapes, or computer games or programs from a library to help _ [(D) (you)] learn _? 1=Yes 2=No	X	X	X	X
54.	Would you tell me how helpful each of the following resources was or could have been in helping _ to learn this activity? For each, would you tell me whether it was or could have been "very helpful," "somewhat helpful," or "not helpful."	X	X	X	X
a.	[(A) (Children's)] books/magazines? [(B) (C)(D) (or newspaper articles?)] 1=Very helpful 2=Somewhat helpful 3=Not helpful	X	X	X	X
b.	Television programs on a regular channel 1=Very helpful 2=Somewhat helpful 3=Not helpful	X	X	X	X
c.	Television programs on a cable channel 1=Very helpful 2=Somewhat helpful 3=Not helpful	X	X	X	X

		A	B	C	D
d.	Videocassettes	X	X	X	X
	1=Very helpful 2=Somewhat helpful 3=Not helpful				
e.	Records	X	X	X	X
	1=Very helpful 2=Somewhat helpful 3=Not helpful				
f.	Radio programs	X	X	X	X
	1=Very helpful 2=Somewhat helpful 3=Not helpful				
g.	Audiocassettes	X	X	X	X
	1=Very helpful 2=Somewhat helpful 3=Not helpful				
h.	Picture puzzles	X			
	1=Very helpful 2=Somewhat helpful 3=Not helpful				
i.	Toys	X			
	1=Very helpful 2=Somewhat helpful 3=Not helpful				
j.	Computer games or programs	X	X	X	X
	1=Very helpful 2=Somewhat helpful 3=Not helpful				
55.	Are you aware of any specific instructional materials or programs which could have been used [(B)(C)(D) (with these resources)] to help _ [(D) (you)] learn _? That is, are you aware of any good...	X	X	X	X
a.	books/magazines that could have helped	X	X	X	X
	1=Yes 2=No				

		A	B	C	D
b.	TV programs that could have helped 1=Yes 2=No	X	X	X	X
c.	VCR tapes that could have helped 1=Yes 2=No	X	X	X	X
d.	records that could have helped 1=Yes 2=No	X	X	X	X
e.	radio programs that could have helped 1=Yes 2=No	X	X	X	X
f.	audiocassettes/tapes that could have helped 1=Yes 2=No	X	X	X	X
g.	picture puzzles that could have helped 1=Yes 2=No	X			
h.	toys that could have helped 1=Yes 2=No	X			
i.	computer programs that could have helped 1=Yes 2=No	X	X	X	X
56.	Now I would like to read you a list of statements about different styles of learning. For each one, please tell me if you agree or disagree with the statement.	X	X	X	X
a.	(A) I would rather have _ learn on _'s own than as part of a group with others.	X	X	X	X

		A	B	C	D
	(B)(C)(D) _ [(D) (I)] would rather learn on _'s [(D) (my)] own than as part of a group with others. 1=Agree 2=Disagree				
b.	_ [(D) (I)] learn(s) better in a classroom structure than by studying on _ [(D) (my)] own. 1=Agree 2=Disagree		X	X	X
c.	If _ [(D) (I)] really want(s) to learn something _ [(D) (I)] has (have) to enroll in a course. 1=Agree 2=Disagree		X	X	X
d.	(A) I prefer to have _ get information from people instead of books. (B)(C)(D) _ [(D) (I)] prefer(s) to get information from people instead of books. 1=Agree 2=Disagree	X	X	X	X
e.	(A) I prefer to set _'s pace of learning than having the pace set for _. (B)(C) _ prefers setting pace of learning to having the pace set for _. (D) I prefer setting my own pace of learning to having the pace set for me. 1=Agree 2=Disagree	X	X	X	X
57.	We were talking earlier about two major kinds of learning, the practical and the intellectual. We would like to know how useful you consider each of several ways of providing information to _ for both of these kinds of learning. I will read off each way of providing information and then ask you first about recreational/practical learning, and then about intellectual learning.	X	X	X	X

	A	B	C	D
Please tell me whether you think the way of providing information that I mentioned is "very useful," "somewhat useful," or "not useful at all."				
a. **Talking with someone knowledgeable about it. [(A) (Having _ talk with you about it.)]**	X	X	X	X
Recreational/practical: 1=Very useful; 2=Somewhat useful; 3=Not useful — **Intellectual**: 4=Very useful; 5=Somewhat useful; 6=Not useful				
b. **Listening [(A) (Having _ listen)] to someone talk about it (lectures).**	X	X	X	X
Recreational/practical: 1=Very useful; 2=Somewhat useful; 3=Not useful — **Intellectual**: 4=Very useful; 5=Somewhat useful; 6=Not useful				
c. **Looking [(A) (Having _ look)] at pictures (still photographs, slides, illustrations).**	X	X	X	X
Recreational/practical: 1=Very useful; 2=Somewhat useful; 3=Not useful — **Intellectual**: 4=Very useful; 5=Somewhat useful; 6=Not useful				
d. **Reading [(A) (Having _ read)] words about it.**	X	X	X	X
Recreational/practical: 1=Very useful; 2=Somewhat useful; 3=Not useful — **Intellectual**: 4=Very useful; 5=Somewhat useful; 6=Not useful				
e. **Watching [(A) (Having _ watch)] motion pictures, TV, or animated cartoons.**	X	X	X	X
Recreational/practical: 1=Very useful; 2=Somewhat useful; 3=Not useful — **Intellectual**: 4=Very useful; 5=Somewhat useful; 6=Not useful				

	A	B	C	D
f. Watching [(A) (Having _ watch)] a live demonstration.	X	X	X	X

Recreational/practical

1=Very useful
2=Somewhat useful
3=Not useful

Intellectual

4=Very useful
5=Somewhat useful
6=Not useful

g. (B)(C)(D) Trial and error actual practice. [(A) (having _ practice and learn by mistakes)].	X	X	X	X

Recreational/practical

1=Very useful
2=Somewhat useful
3=Not useful

Intellectual

4=Very useful
5=Somewhat useful
6=Not useful

58. When _ [(D) (you are)] is trying to learn something, how important is it for _ [(D) (you)] (statement). Would you say very important, somewhat important, or not important at all?

a. to have a friend or another person who is involved in the same learning activity.	X	X	X	X

1=Very important
2=Somewhat important
3=Not important at all

b. to get feedback; that is, some way of knowing how well _ is doing.	X	X	X	X

1=Very important
2=Somewhat important
3=Not important at all

c. to get encouragement from someone.	X	X	X	X

1=Very important
2=Somewhat important
3=Not important at all

59. I have just a few more questions.

Approximately how many weekdays does _ typically spend some time at any of the following places?	X
a. Day care center/program?	X

[Enter number of days]

		A	B	C	D
	b. Nursery school?	X			
	[Enter number of days]				
	c. Kindergarten?	X			
	[Enter number of days]				
	d. Some other household?	X			
	[Enter number of days]				
60.	Is the day care program conducted or sponsored by a: 1=public school, 2=other public or government agency, 3=private--church-related organization, or 4=private--non-church-related organization?	X			
61.	Is the nursery school conducted or sponsored by a: 1=public school 2=other public or government agency 3=private--church-related organization, or 4=private--non-church-related organization?	X			
62.	Is the kindergarten conducted or sponsored by a: 1=public school 2=other public or government agency 3=private--church-related organization, or 4=private--non-church-related organization	X			
63.	I have just a few more questions. Does _ attend a public or private school? 1=Public 2=Private 3=Does not attend		X	X	
64.	Is there an adult at home when _ gets home from school? 1=Yes 2=No		X	X	

		A	B	C	D
65.	Before starting elementary school did _ ever attend:				
	a. Day Care Program? 1=Yes 2=No		X	X	
	b. Nursery School? 1=Yes 2=No		X	X	
	c. Kindergarten? 1=Yes 2=No		X	X	
66.	In a typical week, how many hours do you spend playing games with _, [(B)(C) (helping _ with _ school work)] reading to _ , or in similar activities with _? [Enter number of hours--Range: 00-80]	X	X	X	
67.	Does _ have:				
	a. own room in your house 1=Yes 2=No	X	X	X	
	b. a regular bedtime 1=Yes 2=No	X	X	X	
	c. a regular time to do homework 1=Yes 2=No		X	X	
68.	Which of the following statements describe your involvement in the children's homework from school?		X	X	X
	a. I review the work and check accuracy		X	X	X
	b. I help the children do the work		X	X	X

		A	B	C	D
69.	Would you classify yourself as: 1=white 2=black 3=hispanic 4=asian american 5=american indian, or 6=other?	X	X	X	X
70.	Does _ live with one parent or guardian or with two parents or guardians? 1=One 2=Two	X	X	X	
71.	Which of the following describes your relationship to _? Are you the: 1=natural parent 2=adoptive parent 3=foster parent 4=stepparent 5=other relative, or 6=not related?	X	X	X	
72.	About how often do you watch the news on television? Would you say... 1=Every day 2=A few times a week 3=Once a week 4=Less than once a week 5=Never				X
73.	About how often do you read the newspaper? Would you say... 1=Every day 2=A few times a week 3=Once a week 4=Less than once a week 5=Never				X
74.	In the past year, have you or your spouse ever				X
	a. Written to an elected official or your newspaper				
	b. Attended a public meeting on town or school affairs				X

		A	B	C	D
	c. Served as an officer or on a committee for some civic, church, or political organization				X
	d. Signed a petition				X
	e. Made a public speech				X
75.	Are you currently employed, either full time or part time, outside the home? 1=Yes, full time. 2=Yes, part time. 3=No (skip to Q.77).	X	X	X	X
76.	What is your occupation? [Enter verbatim response. Limit of 40 characters.]	X	X	X	X
77.	Is your spouse currently employed, either full time or part time, outside the home? 1=Yes, full time. 2=Yes, part time. 3=No 4=Not applicable (no spouse) [Skip to Q.79]	X	X	X	X
78.	What is your spouse's occupation? [Enter verbatim response. Limit of 40 characters.]	X	X	X	X
79.	Are you currently enrolled in school, college, or other formal classes for credit, either full time or part time? 1=Yes, full time 2=Yes, part time 3=No				X
80.	What type of certificate, diploma, or degree are these classes or courses leading toward? 1=8th grade certificate 2=High school diploma or equivalency certificate 3=Certificate or post-high school diploma in a vocational program 4=2-year degree from a college or technical institute 5=4-year degree from a college or university 6=Graduate or professional degree 7=Other 8=Not leading to any certificate, diploma, or degree				X

		A	B	C	D
81.	What is the last grade of regular school that you [(D) (and your spouse)] have completed, not counting specialized schools like secretarial, art or trade schools. First, your education? 0=No school 1=Grade school (1-8) 2=Some high school (9-11) 3=High school graduate (12) 4=Some college (13-15) 5=College graduate (16) 6=Post graduate (17+) [(D) (7= No spouse . . . N/A)]	X	X	X	X
82.	And now, the other parent/guardian's [(D) (your spouse's)] education?	X	X	X	X
83.	Finally, including everyone in your family who works, which category best describes your family's total income before taxes last year? Was it: 1=Less than $10,000, 2=Between $10,000 and $20,000, 3=Between $20,000 and $40,000, or 4=More than $40,000?	X	X	X	X

Appendix B

Summary of HITS Study Design and Survey Methodology

Appendix B

Summary of HITS Study Design

and Survey Methodology

Roles of CPB and RTI in the HITS Survey

RTI was survey subcontractor. At the Corporation for Public Broadcasting (CPB), considerable guidance and assistance in the data acquisition and processing activities were provided by Dr. John A. Riccobono, the CPB Principal Investigator, who was on site at RTI during most of the operational period. Direct assistance with aspects of data acquisition and processing were also provided by the central CPB study staff, Mr. Richard Grefe', Mr. Edward Coltman, and Ms. Joan Katz. CPB staff also reviewed previous drafts of this document and provided helpful suggestions and insights for improving the report.

At RTI statistical assistance in sampling, weighting, and tabulations was provided by Dr. Roy Whitmore and Dr. Robert Mason. Ms. Jan Whelan provided major contributions in all areas of computer support, including programming of the CATI instrument, development and execution of the computer-based control system, and preparation of the final data base. Ms. Judy Lynch, with assistance from Mr. Dale DeWitt, developed interviewer training material and conducted all interviewer training. The interviewers were hired and monitored by RTI.

HITS Study Design and Survey Methodology

A. The Sample

The HITS-85 sample included four specific age groups: 2 to 5 year olds; 6 to 11 year olds; 12 to 17 year olds; and adults (18 years old and over). The target population was defined to be individuals who were:

(1) at least two years of age as of the interview date;

(2) residing in the coterminous United States in a household or in a

noninstitutional dwelling unit (e.g., apartment, dormitory, or boarding house room) containing no more than nine unrelated individuals and served by a private telephone; and

(3) residing in a household or noninstitutional dwelling unit with at least one English-speaking adult family member also in residence.

It should be clearly recognized, however, that condition (2) restricts the population of interest to individuals in residences served by a telephone (although allowances were made to generalize results to cases for which multiple residences were served by a single telephone). Less than one-eighth of one percent of contacted telephone numbers were excluded because no English-speaking adult lived in the household.

Generally, the sample design called for a two-stage sample of individuals (selection of households and subsequent selection of individuals within households). Household sampling relied on a cost-effective random digit dialing (RDD) procedure, which in itself is a multi-stage sampling approach to producing an approximately equal probability sample of households. Given selection of households, individuals were selected from the households at rates established to meet study response targets within the four age groups of interest. Target sample sizes for each age group were: 2,203 2-5 year olds; 1,102 6-11 year olds; 552 12-17 year olds; and 1,650 adults. The individual sampling procedure allowed for selection of no more than one individual per age group existing in each household. Thus, the per-household yield for sample members was expected to range from none to four, depending on the age-group composition of the household.

To avoid erosion of precision due to unequal weighting, the sample was generally designed to produce an approximately self-weighting sample of individuals within each age group. For the three older age groups, a household was to be selected to provide a member of some age group with probability approximately proportional to

the size of that age-group membership within the household; and then, if the household were selected to represent that age group, a single member of the age group was to be chosen at random. Because of the disproportionately large number of 2-to-5-year-old sample members required by the study (i.e., this age group is the rarest in the population but required the largest sample), the self-weighting nature of the sample design was somewhat constrained regarding this youngest age group. Cost-efficient design called for selection of a household to represent this age group, whenever the age group was present in the household, and the subsequent random selection of a specific individual within the age group.

Since the household sampling approach called for sampling of households with replacement, repeated sampling of the same household was expected at the second stage. However, despite the legitimacy of with-replacement replication, specified minimal numbers of unique respondents were developed and obtained.

A short screening interview was administered to all identified households that would participate, and a roster of household members was constructed for those families who responded. Any adult (at least 18 years old) household member was allowed to provide the roster information. Name, age, and sex of each individual who currently resided permanently within the household (excluding visitors and household members away at school or in military service, institutionalized, or otherwise not available) were entered on this household roster. Subsequently, an equal probability subsample of the members of each sample design age group (2-5, 6-11, 12-17, and 18+) was then selected from the members of the age group in households successfully screened.

In order to reduce the unequal weighting effect due to random selection of a sample subject within the three older age groups, the j-th household was selected to provide a member for the i-th age group sample with probability P(i,j), given by

$$P(i,j) = \text{minimum } (1,\ S(i,j)R(i)), \qquad (1)$$

where S(i,j) is the number of members of the i-th age group in the j-th household, and R(i) is the age-group-specific selection rate which is constant over households. The selection rate R(i) is defined as

$$R(i) = n_i / S(i,+),$$

where n_i is the desired sample size (including potential refusals) and S(i,+) is the expected number of members of the i-th age group that will be found in households successfully screened. The value of S(i,+) was based on 1980 Census data.

Since the rarest age group in the population was the youngest (i.e., 2 to 5 year olds, which occurs in the population in about 12 percent of households), and since this age group also required the largest number of sample members, the overall sample was designed to produce no more than the number of households necessary to satisfy the sample requirements in this age group. This number of households would then necessarily satisfy requirements for the less rare age groups from which fewer sample members were needed. Consequently, the value of S(i,+) for the 2-to-5-year-old age group exceeded n_i by only a relatively small amount (since more than one person in this age group could be expected in some households), and the value of R(i) for the 2-to-5-year-old age group was set to unity.

Within the CATI environment, the selection probabilities given by (1) for each age group were evaluated independently for each sample household as soon as the household roster had been completed. A household was then selected to provide a member for the i-th age group sample with the probability P(i,j), comparing the computed value of (1) with a computer-generated random variate. (It was obviously possible for a household to be selected to provide a member for more than one age group sample if more than one age group was present in the household.) When a household was selected to

provide a member for the i-th age group sample, one member of the age group was selected at random from members of that age group in the household, that is, with probability 1/S(i,j). No more than one sample member per age group was selected from a household, and an individual household rarely contained more than two sample members.

A disadvantage of this procedure is that the number of households selected to provide a member for the i-th age group sample is a random variable. Nonetheless, the sample yield was carefully monitored and the selection rate given by (1) was adjusted during the survey to fine tune the obtained sample size for each age group. (See Methodology Report.) These associated variations in the age group selection rates were reflected by corresponding variations in the sample weights (Methodology Report); otherwise, selection probabilities were roughly equal for all sample members within the three older age groups.

The design did experience a small degree of differential weighting within the three older age groups in those cases where the value of S(i,j)R(i) given in (1) exceeded unity; however, this deviation from a strictly self-weighting sample was quite minor compared to departures introduced through weight adjustments for multiple households per telephone and multiple telephones per household (Methodology Report). The specific values of R(i) that were used to determine P(i,j) for the three older age groups were:

6 to 11 year olds	.2312
12 to 17 year olds	.1182
Adults	.0446

It should be noted that the effects of unequal weighting in the older age groups would occur only rarely using these parameters. In the 6-to-11-year-old group the number of household members in this age group (S(i,j)) would have to exceed 4; in the two successively older age groups, S(i,j) would have to exceed 8 and 22, respectively.

Since the design provided the minimum number of households required so that one selection per age-eligible household was expected to yield the desired number of

2-to-5-year-old sample subjects, the unequal weighting design effect was greater for the 2-to-5 age group. When one or more members of that age group were present, the household was selected to provide a 2 to 5 year old with certainty; and then one of the household members in that age group was selected randomly. Thus, the probability of selecting a specific 2 to 5 year old in the population was inversely proportional to the number of members in that age group within the household containing the specific individual. (These probabilities were typically 1/2 or 1, but in some cases 1/3, resulting in a 3-to-1 weight differential in the latter case--see the Methodology Report.)

Specifications for unique respondents within each age group were:

1,800	2 to 5 year olds;
900	6 to 11 year olds;
450	12 to 17 year olds; and
1,350	adults.

Accounting for both replication and anticipated within-age-group response rates, the required sample sizes for each age group were estimated to be:

2,382	2 to 5 year olds;
1,198	6 to 11 year olds;
627	12 to 17 year olds; and
2,196	adults.

The final sample design (see below) reflected this requirement.

The exact sample design underwent several revisions during the course of the study. Specifically, changes in overall sample size and proportional allocation of sample members among the four age groups were introduced by CPB and CS after initial plans had been implemented. Consequently, the final sampling plan was submitted some two weeks after the telephone survey had begun. Because of the automation built into

the sampling process, these changes did not adversely affect either sample integrity or survey operations.

Other refinements to the sample design were initiated during the course of the survey, as it became evident that certain parameter estimates used in the sample design (e.g., age-group existence rates, household identification and rostering rates, replicate sampling rates, and within-age-group response rates) were not being realized. These refinements were initiated to accomplish a closer approximation to targeted numbers of unique respondents; they were easily implemented within the automated sampling environment. (See the Methodology Report for a detailed treatment of sample design revisions and refinements.)

The final refined sample design for the HITS-85 survey is shown in Table B1. The design called for 997 Mitofsky/Waksberg Primary [first stage sampling unit (FSU)] Households, which with an optimum cluster size of 21 (see Methodology Report) provided a total of 20,937 total sample households (including replications).

Table B1 dramatically portrays the probabilistic nature of Mitofsky/Waksberg RDD design. Only the number of households to be identified (sections B, D, and F of the table) can be precisely specified. The number of telephone numbers to be worked to realize these fixed requirements (i.e., sections A, C, and E of the table) are expectations based on the identification rates projected in sections B and D of the table. Responding households (i.e., households providing at least rosters of household membership) and the number of age-group sample candidates are also expectations, based on the response and existence rates specified in section G of the table. Likewise, the actual number of sample members selected in most age groups are expectations based on the average sampling rates shown in section H of the table. Finally, both overall numbers of respondents and unique numbers of respondents are expectations based on the response rates and replication rates indicated, respectively, in sections I and J of the table.

Table B1

Final Refined Sample Design
for the HITS-85 Sample

A.	Primary Telephone Numbers Expected		5,332
B.	Sample FSUs Identified (18.5% of A)[a]		997[b]
C.	Secondary Telephone Numbers Expected		35,607
D.	Additional Sample Households Identified (56% of C)[a]		19,940[b]
E.	Total Telephone Numbers Expected (A + C)		40,939
F.	Total Sample Households (B + D)		20,937[b]
G.	Responding Households Expected (87.5% of F)[a]		18,320
	1. With 2-to-5-year-olds (13% of G)[a]	2,382	
	2. With 6-to-11-year-olds (16.9% of G)[a]	3,096	
	3. With 12-to-17-year-olds (18.7% of G)[a]	3,426	
	4. With 18+-year-olds (99.9% of G)[a]	18,302	
H.	Sample Members Expected		6,403
	1. 2-to-5-year-olds (100% of G.1)[c]	2,382	
	2. 6-to-11-year-olds (38.7% of G.2)[c]	1,198	
	3. 12-to-17-year-olds (18.3% of G.3)[c]	627	
	4. 18+-year-olds (12% of G.4)[c]	2,196	
I.	Expected Number of Respondents		5,507
	1. 2-to-5-year-olds (92.5% of H.1)[a]	2,203	
	2. 6-to-11-year-olds (92% of H.2)[a]	1,102	
	3. 12-to-17-year-olds (88% of H.3)[a]	552	
	4. 18+-year-olds (75% of H.4)[a]	1,650	
J.	Expected Number of Unique Respondents (81.7% of I)[a]		4,500
	1. 2-to-5-year-olds	1,800	
	2. 6-to-11-year-olds	900	
	3. 12-to-17-year-olds	450	
	4. 18+-year-olds	1,350	

[a] Based on study results through May 24, 1985.

[b] These figures are fixed sample sizes for the revised design, but all other figures shown are the expected values of random variables.

[c] These rates were established to approximate the targeted number of respondents, given other rates that were being experienced in the survey.

Given the basic design of the study, it can be seen from Table B1 that the major revisable free parameters available for control of realized respondent sizes are the number of primary FSU households (section B) and within-age-group sample rates (section H). Because the final sample design was refined by adjusting these parameters to accommodate other rates that were being experienced, relatively tight control of targeted respondent samples was achieved. The several realized rates, as compared to those projected in the revised design, are shown in Table B2.

The implementation of Mitofsky/Waksberg sampling is an interactive process; and, as indicated previously, sampling of individuals was acomplished in real time during the actual telephone interview. The general flow of implementing these sampling procedures is shown in Figure 1. The first three steps of the sampling process represent the stages of the Mitofsky/Waksberg household sampling process, while the fourth step is the within-household selection of individuals. Step 1 shows the procedures for generating primary random telephone numbers, while step 2 shows the interactive determination of the 997 primary FSU households. Step 3 shows the sampling of telephone numbers within established FSU telephone clusters as well as the interactive determination of secondary households. Step 4, individual sampling within households, is applicable to both primary FSU households and secondary households.

B. Data Collection

Following a major field test, preliminary instruments (one for each age group) and a household screening form to be used in the study were revised and reformatted for computer-assisted telephone interviewing (CATI). The revised instrumentation was subjected to a clinical field test and, as a result, further revised and reformatted to be more compatible with telephone administration. The final instruments, together with other necessary household screening, sampling, recordkeeping, and control elements were integrated into a CATI administration system for use during the survey. Individual interview questions were directed to those respondents who would best be

Table B2

Projected Rates
Compared to Obtained Rates

Estimate	Projected Rate[a]	Obtained Rate
Primary household identification rate	18.5%	18.7%
Secondary household identification rate	56.0%	48.0%
Household rostering rate	87.5%	89.3%
Rostered households with:		
2-to-5-year-olds	13.0%	12.9%
6-to-11-year-olds	16.9%	16.9%
12-to-17-year-olds	18.7%	19.2%
Adults	99.9%	99.9%
Sampling rates		
2-to-5-year-olds	100.0%	100.0%
6-to-11-year-olds	38.7%	39.6%
12-to-17-year-olds	18.3%	17.3%
Adults	12.0%	12.4%
Response rates[b]		
2-to-5-year-olds	92.5%	95.9%
6-to-11-year-olds	92.0%	91.3%
12-to-17-year-olds	88.0%	90.6%
Adults	75.0%	75.6%

[a] Based on refined sample design.

[b] Including interviews with some item nonresponse.

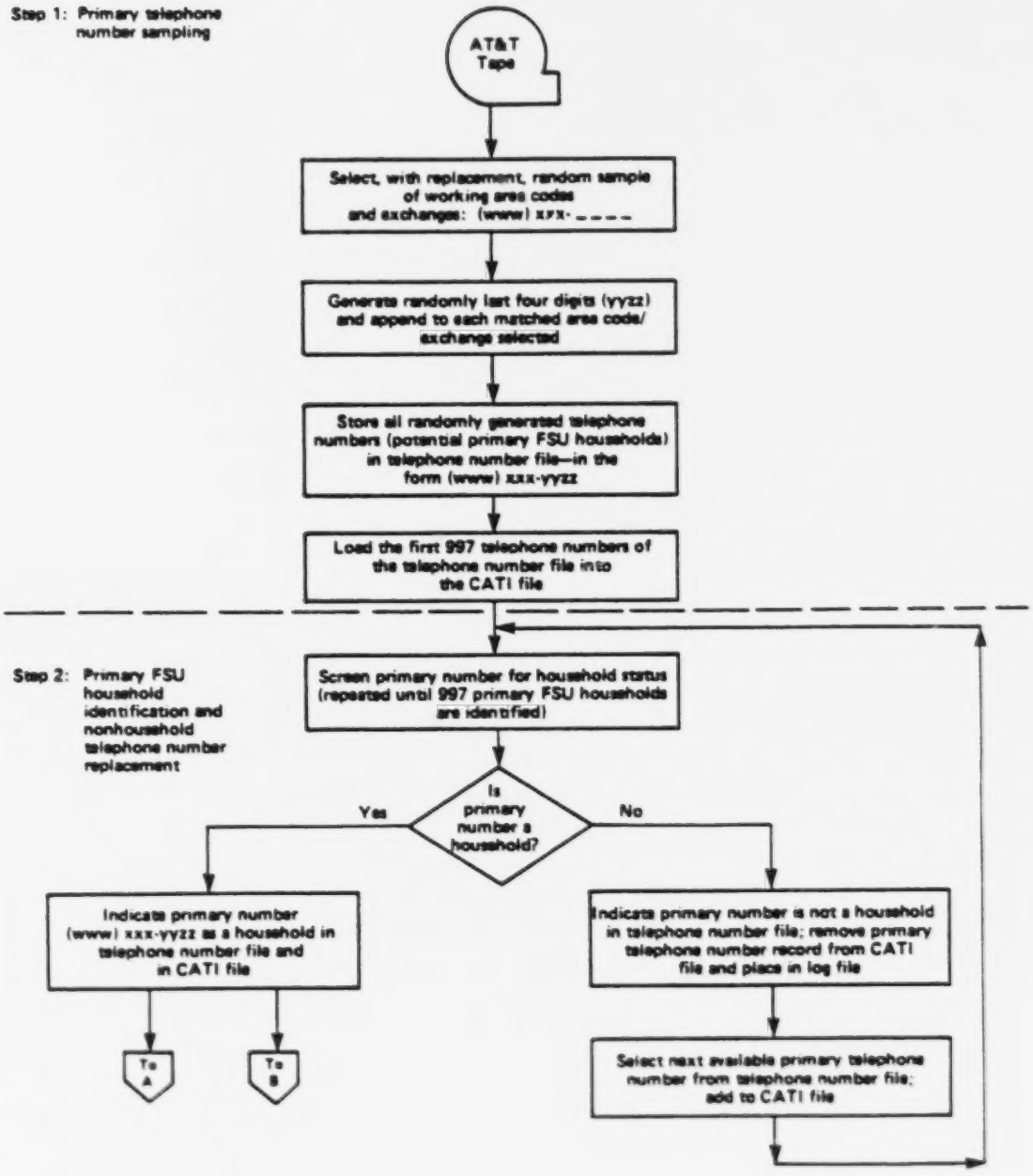
Step 1: Primary telephone number sampling
AT&T Tape
Select, with replacement, random sample of working area codes and exchanges: (www) xyx-____
Generate randomly last four digits (yyzz) and append to each matched area code/ exchange selected
Store all randomly generated telephone numbers (potential primary FSU households) in telephone number file—in the form (www) xxx-yyzz
Load the first 997 telephone numbers of the telephone number file into the CATI file
Step 2: Primary FSU household identification and nonhousehold telephone number replacement
Screen primary number for household status (repeated until 997 primary FSU households are identified)
Is primary number a household?
Yes
No
Indicate primary number (www) xxx-yyzz as a household in telephone number file and in CATI file
To A
To B
Indicate primary number is not a household in telephone number file; remove primary telephone number record from CATI file and place in log file
Select next available primary telephone number from telephone number file; add to CATI file

Figure 1. Flow of HITS Sample Implementation.

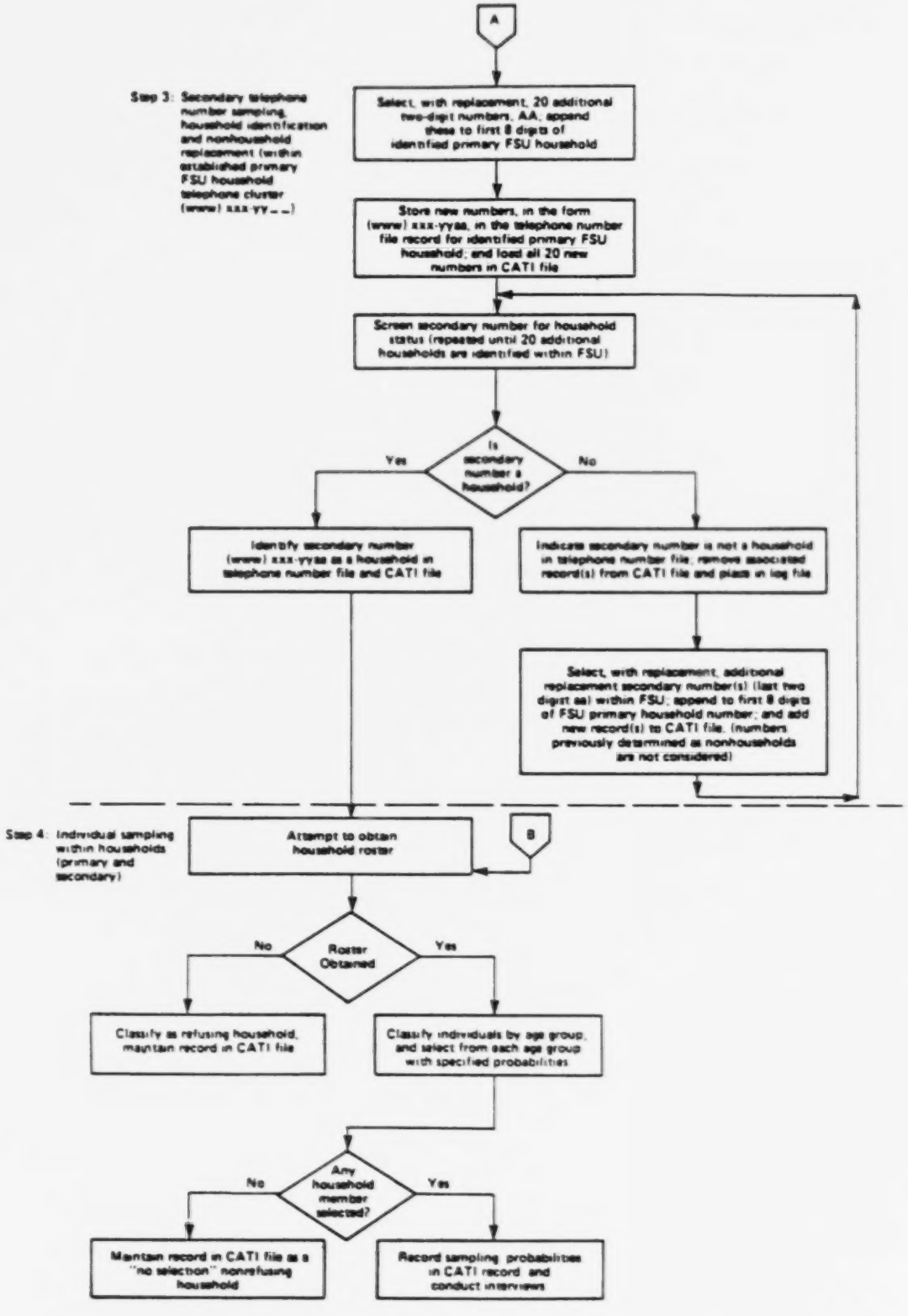
A
Step 3: Secondary telephone number sampling, household identification and nonhousehold replacement (within established primary FSU household telephone cluster (www) xxx-yy-- --)
Select, with replacement, 20 additional two-digit numbers, AA, append these to first 8 digits of identified primary FSU household
Store new numbers, in the form (www) xxx-yyaa, in the telephone number file record for identified primary FSU household; and load all 20 new numbers in CATI file
Screen secondary number for household status (repeated until 20 additional households are identified within FSU)
Is secondary number a household?
Yes
No
Identify secondary number (www) xxx-yyaa as a household in telephone number file and CATI file
Indicate secondary number is not a household in telephone number file, remove associated record(s) from CATI file and place in log file
Select, with replacement, additional replacement secondary number(s) (last two digits aa) within FSU; append to first 8 digits of FSU primary household number; and add new record(s) to CATI file. (numbers previously determined as nonhouseholds are not considered)
Step 4: Individual sampling within households (primary and secondary)
Attempt to obtain household roster
B
Roster Obtained
No
Yes
Classify as refusing household, maintain record in CATI file
Classify individuals by age group, and select from each age group with specified probabilities
Any household member selected?
No
Yes
Maintain record in CATI file as a "no selection" nonrefusing household
Record sampling probabilities in CATI record and conduct interviews

Figure 1 (continued)

able to provide the requested information reliably. Thus, adult sample members were interviewed directly, but proxy interviews with an adult family member (i.e., the parent or guardian most involved in the child's education) were conducted for all sample members under 18 years of age. It was felt that any limitations of the ability of proxies to report for their children were outweighed by the potential data quality and telephone interviewing problems associated with interviewing children directly.

All telephone interviewers received extensive training over a two-day period both in general CATI operations and in the specific administration of each HITS interview question. Actual data collection took place over a period of approximately four and one-half months, from 11 February to 22 June 1985. Telephone interviewing was conducted as a 7-day-a-week operation, with two interviewer shifts. Up to 18 interviewers were employed per shift; and two supervisors were on hand to provide assistance and quality control, including "listen-in" monitoring of actual interviews performed by each interviewer.

With the exception of the production shortfalls resulting from interviewer turnover and the associated need to extend the survey schedule, few problems were experienced with survey operations. Daily monitoring of results allowed most problems to be quickly resolved before they could generate related downstream problems. Also, daily monitoring allowed sampling refinements to guard against shortfalls of respondent targets.

In conducting the HITS-85 survey, a total of 38,566 unique telephone numbers were called, and 16,951 (44 percent) of them were identified as households. Among identified households, almost 90 percent were rostered; and of those rostered, individuals were sampled from approximately 30 percent. Response rates for the sampled individuals were approximately 96 percent, 91 percent, 91 percent, and 76 percent for the four age groups, from youngest to oldest.

Sampling Replication and Within-Household Selection

Replication statistics for the 16,951 unique households selected are provided in Table B3. The distribution approximates our projections reasonably well. Although greater numbers of multiple replications were obtained in the categories greater than 3 than we had projected, this was caused by the use of an average household identification rate within cluster for the projection modeling. That model quickly breaks down in clusters with sparse total available numbers (principally clusters in rural areas) or households (principally in urban areas).

Projected and realized selections within unique households are shown in Table B4. Obtained results quite closely approximate those projected from the final refined sample design.

Household-Level Results

The final household-level result status of all identified households (both total and unique) is shown in Table B5. It is important to note that the percentage distributions of households across the final result status classifications are markedly similar. (The largest percentage difference between unique and total cases in any result category is no more than seven-tenths of a percentage point.) This provides empirical indication that sample replications were not differentially represented in certain household-status categories (which, theoretically, they would not be expected to be).

Table B5 clearly indicates the limited return of RDD samples for specific respondent group targets. In well over 60 percent of all identified households, no respondent was selected. When this is corrected for households that were not rostered (a requirement for sampling), the "null" household rate approaches 70 percent. Table B5 shows that the rostering of identified households approached the quite respectable rate of 90 percent.

Table B 3
Distribution of Household Sample Replications

Number Times Household was Sampled									
1	2	3	4	5	6	7	8	9 or more	Total
13,690 (80.8%)	2,766 (16.3%)	374 (2.2%)	73 (0.4%)	27 (0.2%)	7 (*)	6 (*)	2 (*)	6 (*)	16,951 (100%)

NOTE: Based on unique households; percentage of row total is provided in parentheses. Projected total of replicated household was 18.3 percent.
* Less than 0.05 percent.

Table B 4
Projected and Realized Distribution of Selections Within Households

Number of Within-Household Selections	Projected[a]	Realized
0	10,689 (70.69%)	10,530 (69.64%)
1	3,689 (24.40%)	3,810 (25.20%)
2	679 (4.50%)	709 (4.69%)
3	62 (0.41%)	69 (0.46%)
4	2 (0.01%)	3 (0.02%)
Total	15,121 (100%)	15,121 (100%)

NOTE: Based on unique identified and rostered households. Projected and realized rates are given in parentheses.

[a] Projected rates were obtained from final refined age-group sampling rates applied to the probability distribution of national household age-group compositions. Computed rates were then applied to actual number of rostered unique households.

Table B 5

Final Result Status of Identified Households

	Status					Total
	Household Roster Refusal or Impossible	Roster Completed None Sampled	Interview Refusal or Impossible	Final Partial Completion	Final All Interviews Completed	
Total	2,251 (10.8%)	13,100 (62.6%)	582 (2.8%)	437 (2.1%)	4,567 (21.8%)	20,937 (100%)
Unique	1,830 (10.8%)	10,530 (62.1%)	486 (2.8%)	356 (2.1%)	3,749 (22.1%)	16,951 (100%)

NOTE: Percentages of total are provided in parentheses.

Individual-Level Results

Results specific to individuals in the four age groups within rostered households are provided in Table B6 (for both unique and total--with replication--cases). The very close agreement between total and unique results is again demonstrated in this table, even in relatively low-frequency cells. The first principal row of Table B6 ("Age Group Present") addresses existence rates of the age groups in rostered households. Existence rates differ by no more than six-tenths of a percentage point from those projected by the final refined sample design.

Obtained selection rates within households containing age group members are shown in Row 2 of Table B6. While these obtained rates fluctuate somewhat more from expected rates, they are not systematically higher or lower than expectations; and departures seem greatest in the groups from which fewer cases were to be selected. Thus, departures appear to represent no more than simple fluctuations in the random process used in selection.

Rows 3 through 6 of the table provide the final status of individuals selected into the sample within each age group. Generally, results for the 6-to-11-year-old group and the 12-to-17-year-old group are quite similar. Cooperation rates are slightly higher for the 2-to-5-year-old group and markedly lower for the adult group. All results are generally higher than projected in the final refined sample design.

Estimates of overall sample response rates (accounting for both potential selections from unrostered households and responses of selected individuals within rostered households) cannot be determined directly, for two principal reasons. First, exact existence rates of the several age groups in unrostered households are undetermined (by definition); second, within-household sampling could not be implemented in unrostered households (again, by definition). An indirect estimate of this overall response rate is possible, however, by assuming that individuals from the four age groups would have existed in the unrostered households at the same rate as in rostered households (Table B6) and, where existing, would have been selected at the

Table B6

Final Individual-Level Status within
Rostered Households by Age Group

	Age Group Base	Age Group				Unduplicated Household Count
		2-5	6-11	12-17	18+	
Age Group Present	Total	2,422 (13.0%)	3,160 (16.9%)	3,601 (19.3%)	18,661 (99.9%)	18,686
	Unique	1,951 (12.9%)	2,578 (17.0%)	2,966 (19.6%)	15,104 (99.9%)	15,121
Age Group Selected	Total	2,422 (100%)	1,250 (39.6%)	624 (17.3%)	2,310 (12.4%)	
	Unique	1,951 (100%)	1,024 (39.7%)	526 (17.7%)	1,946 (12.9%)	
Age Group Refusal	Total	67 (2.8%)	84 (6.7%)	45 (7.2%)	394 (17.1%)	
	Unique	56 (2.9%)	68 (6.6%)	34 (6.5%)	331 (17.0%)	
Age Group Other Non-Completion	Total	31 (1.3%)	25 (2.0%)	14 (2.2%)	161 (7.0%)	
	Unique	26 (1.3%)	21 (2.1%)	13 (2.5%)	136 (7.0%)	
Age Group Partial Interview	Total	113 (4.7%)	40 (3.2%)	23 (3.7%)	142 (6.1%)	
	Unique	88 (4.6%)	34 (3.3%)	19 (3.6%)	118 (6.1%)	
Age Group Complete Interview	Total	2,211 (91.3%)	1,101 (88.1%)	542 (86.9%)	1,613 (69.8%)	
	Unique	1,781 (91.2%)	901 (88.0%)	460 (87.5%)	1,361 (69.9%)	

NOTE: Percentages are provided in parentheses. For Row 1 (age group present), percentages are based on the unduplicated household count. For Row 2, percentages are based on Row 1 counts. For Rows 3 through 6, percentages are based on Row 2 counts.

Table B7

Estimated Overall Response Rates by Age Group

Age Group	Estimated Numbers of Age Group That Would Have Been Selected			Respondents[c]	Estimated Overall Response Rate
	Estimate From Unrostered Households[a]	Selections From Rostered Households[b]	Estimated Total		
2-to-5-Year-Olds	236	1,951	2,187	1,869	85.5%
6-to-11-Year-Olds	120	1,024	1,144	935	81.7%
12-to-17-Year-Olds	66	526	592	479	80.9%
Adults	219	1,946	2,165	1,479	68.3%

NOTE: All calculations based on unique household cases.

[a] Determined from 1830 unique unrostered households, adjusted for empirical existence rates (Table E.8) and actual sampling rates (see Methodology Report).

[b] From Table E.8.

[c] Partial and complete interviews, as shown in Table E.8.

applicable sampling rates. Under these assumptions, the overall response rates are estimated in Table B7.

C. Data Processing

Given the CATI mode of data collection, all interview data collected (or internally generated, such as sampling parameters) were available in the machine-readable, household-level CATI file as soon as the survey was concluded. Also, because of the real-time edits, recodings, and checks built into the CATI program, much of the recoding, range checking, consistency checking, and skip-pattern checking had already been performed as the data were collected. Further, corrections of specific problematic data records as reported by study interviewers and supervisors, or detected from the daily computer-generated control reports, had been made on a continuing basis during data collection. Consequently, the data file available at the conclusion of survey operations was relatively clean.

Nonetheless, additional data editing and processing were required to remove previously undetected data errors. Certain post-hoc coding operations also were required, and it was necessary to otherwise standardize and clean the file toward preparation of a final deliverable data file, with associated documentation.

The specific post-data collection processing steps performed included:

- Reconciliation of individual and household-level result codes.
- Addition of computed weights to the data file.
- Subsetting the file to households with some questionnaire data. (For a large number of CATI records, no one was selected from the household; in a smaller number of cases, no data were provided on any selected individual. Such basically blank records were not considered appropriate for a data file.)
- Assignment of appropriate nonresponse codes to blank data fields (omitted due to noncompletion of all or part of an interview).

- o Replication of redundant information within multiple-interview household records (to include the household-level data in the age-group-specific questionnaire data where such redundant material had not been additionally requested).
- o Post-hoc coding of certain responses to open-ended items.
- o Additional editing of skip patterns (with assignment of appropriate missing value codes and resolution of detected errors).
- o Preparation and documentation of the deliverable data file.

D. Weighting and Nonresponse Adjustments

To accommodate appropriate analysis of data, within-age-group sampling weights were computed for each household member selected into the sample. In essence, the sampling weight assigned was a function of the inverse of the probability of selecting the particular sample unit (age-group member) into the sample.

Further, to correct as much as possible for the potential bias introduced by nonresponse, the raw sampling weights were adjusted for complete instrument nonresponse (i.e., provision of no data or minimal data by or for an individual as a consequence of interview refusal or other reason), using a weighting class adjustment approach. This procedure effectively distributes the sample weight of nonrespondents to respondents within the same classification of individuals; such weighting classes are defined on the basis of available variables thought to be related to major study outcomes of interest. Finally, weights were trimmed to allow minimum mean-square-error estimates. All weight computations and adjustments were verified for accuracy of specification and computation, and included on the final data file. (The details of weighting and weight adjustments are covered in the Methodology Report.)

E. Generalized Standard Error Computation

The CS/CPB-specified analyses were conducted using specialized software (SESUDAAN) that allows for appropriate generation of ratio estimators (means, proportions) and their associated standard errors, for complex multi-stage samples selected with equal or unequal probabilities. From these analyses, generalized standard errors were developed for each of the four age groups. (See Appendix C.)

F. Additional Technical Documentation

The following publications provide complete detail and technical documentation pertaining to the HITS survey design or methodology:

1. Burkheimer, G. J., Levinsohn, J. R., and Whelan, J. L. Data Base Design for the Household Technology Study: HTS-85. Research Triangle Park, NC: Research Triangle Institute, August 1985.

2. Burkheimer, G. J. and Wheeless, S. C., Home Information Technology Study (HITS-85): Tabulations and Generalized Standard Errors. Research Triangle Park, NC: Research Triangle Institute, February 1986.

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G. Generalization to the National Population

Considerable survey research suggests that the demographic characteristics of telephone interview respondents are much like those of in-person respondents, except that elderly and low-income subpopulations tend to be underrepresented. To the extent that underrepresentation of these subpopulations would not have dramatically affected results, the sample still provides a good representation of households nationally; and the telephone survey approach represented a much more cost-effective alternative for collecting the desired survey data. Specific inferences for the elderly and low-income subpopulations should be made with caution, however. (For further detail, see the Methodology Report to this study.)

Appendix C

Reliability of Estimates

The statistics provided in this summary report are estimates derived from a sample survey. Two types of errors, sampling and nonsampling, are possible in such estimates; and the joint effects of these errors determine the accuracy of a survey result. Nonsampling errors can be attributed to many sources:

- o inability to obtain information about all cases in the sample;
- o definitional difficulties;
- o differences in the interpretation of questions;
- o respondents' inability or unwillingness to provide correct information;
- o mistakes in recording or coding data; and
- o other errors of collection, response, processing, coverage, and estimation for missing data.

Nonsampling errors also occur in a census survey.

Because the estimates reported are based on a probability sample of the population rather than the entire population, they are subject to sampling variability. The particular sample used in this survey is one of a large number of possible samples that could have been selected using the same sample design. Estimates derived from the different possible samples would differ from each other. The standard error of a survey estimate is a measure of the reliability of the estimate. More specifically, it is a measure of the variation among the estimates from all possible surveys. Thus, the standard error is a measure of the precision with which an estimate from a particular sample approximates the average result of all possible samples.

Generalized Standard Errors

Computation of standard error estimates for every statistic produced for this study was not planned. Rather, a method of approximating the standard errors for estimates of percentages was implemented. This method is based on the concept of a mean design effect, which was determined from error variance estimates from the CPB-specified tabulations. Four generalized standard error tables were produced, one for each of the four study-defined age group samples. These generalized standard errors can be used for approximating the standard error of other weighted estimates of percentages computed for the study. The procedures used to produce the generalized standard error tables are comparable to those used for the generalized standard error tables previously produced for CPB under prior contracts.

The data collected for this study were obtained through multi-stage samples. Such samples permit efficient data collection but generally inflate the variance of the survey estimates that would be obtained from a simple random sample (SRS) of the same size. The design effect for a statistic is the ratio of the variance of the statistic under the actual sample design to the variance that would be obtained from an SRS of the same size. When estimating a percentage for some subgroup-d, say P_d, the SRS variance would be $P_d(100 - P_d)/n_d$, where n_d is the sample size from subgroup-d.

The design effect $D(\cdot)$, for an estimate of P_d, say $\hat{P}_d$, is then given by

$$D(\hat{P}_d) = V(\hat{P}_d)/[P_d(100-P_d)/n_d], \qquad (1)$$

where $V(\hat{P}_d)$ is the variance of $\hat{P}_d$ calculated for the actual sample design.

If the design effect is fairly constant for a set of statistics, then the average design effect can be used generally to approximate the variance of other

statistics of the same nature. Explicitly, this approximation for an estimated percent is

$$V(\hat{P}_d) = \bar{D}\,[\hat{P}_d(100 - \hat{P}_d)/n_d], \qquad (2)$$

where $\bar{D}$ is the average design effect. Since CPB indicated that column percentages were of greatest interest in this study, the computed standard errors of column percentages were used for determining $\bar{D}$.

A weighted average design effect was used, where each design effect was weighted by the population estimate for the subgroup it represents. That is, for purposes of this study, $\bar{D}$ was defined as

$$\bar{D} = \sum_{d=1}^{K} \hat{Y}_d D(\hat{P}_d) \Big/ \sum_{d=1}^{K} \hat{Y}_d, \qquad (3)$$

where $\hat{Y}_d$ is the estimated population total for subgroup-d and K is the number of estimates over which the design effects were averaged. This strategy for variance estimation was suggested by Kish and Frankel and is also described by Cox and Cohen. (See Methodology Report.)

Estimates of $\bar{D}$ were produced from the CPB-specified tabulations. For the column percentage estimates, the overall average estimated design effect for 2 to 5 year olds, 6 to 11 year olds, 12 to 17 year olds, and adults were approximately 1.71, 1.53, 1.40, and 1.50, respectively. Using the appropriate average design effects, generalized standard error tables were computed for each age group, for specific values of $\hat{P}_d$ and n_d. Entries in the tables were calculated using the formula

$$SE(\hat{P}_d) = [\bar{D}\hat{P}_d(100-\hat{P}_d)/n_d]^{1/2} \qquad (4)$$

where $SE(P_d)$ is the approximate standard error of an estimated percentage P_d.

Tables of generalized standard errors for HITS estimates presented in this report appear in Tables C.1, C.2, C.3, and C.4, for 2-5 year olds, 6-11 year olds, 12-17 year olds, and adults, respectively. These tables give approximate standard errors as a joint function of the estimated percentage (given as column headings) and the total sample size on which the percentage is based (given as row headings). For example, the generalized standard error (from Table C.1) for an estimate of 20 percent of an analysis group composed of 300 2-5 year olds is given as 3.02 percentage points. The actual sample sizes on which the reported percentages are based are given in tables in the text.

In many cases, the reported percentage, the sample size on which the percentage is based, or both, will fall within the intervals established in the generalized standard error tables (e.g., 23 percent, or a sample size of 225). For most purposes, it will be sufficient in such cases simply to "eyeball" the appropriate table and estimate the standard error to the nearest whole percent. If more precise standard errors are required, however, such cases will require the investigator to interpolate. (See Methodology Report.)

The sample estimate together with an estimate of its standard error would permit the construction of interval estimates such that, with a prescribed confidence, the interval includes the average result of all possible samples selected and surveyed under essentially the same conditions. With these interval estimates:

- In approximately two-thirds of the possible samples, intervals from one standard error below the estimate to one standard error above the estimate would include the average value of all possible samples. Such an interval is called a "67-percent confidence interval."

- Approximately 19/20 of the possible sample intervals from two standard errors below the estimate to two standard errors above the estimate would include the average value of all possible values. Such an interval is called a "95-percent confidence interval."
- For almost all of the possible samples, the interval from three standard errors below the estimate to three standard errors above the estimate would include the average value of all possible samples.

In general, estimates for small subgroups tend to be relatively unreliable. However, the magnitude of the sampling error that is tolerable depends upon the conclusions being drawn. The reader should be aware that some estimates in this report may have relatively large standard errors. Statistics with such standard errors are generally viewed as not precisely estimated and should be interpreted cautiously.

Confidence intervals can also be constructed (or statistical tests performed) for differences in percentages. Given the standard error for a percentage in group A, $\sigma(P_A)$, and that for an analogous percentage in Group B, $\sigma(P_B)$, a typically conservative standard error for the difference, $P_A - P_B$, is given by

$$\sigma(P_A - P_B) = \sqrt{\{\sigma(P_A)\}^2 + \{\sigma(P_B)\}^2}$$

If the 95 percent confidence interval--the interval defined by $(P_A - P_B) \pm 2\sigma(P_A - P_B)$--does not include zero, then the difference may be taken as a real one at the .05 level of statistical significance.

Table C.1

Generalized Standard Errors for 2-to-5-Year-Olds

Sample Size	Percentage[a/] 1 / 99	5 / 95	10 / 90	20 / 80	25 / 75	30 / 70	35 / 65	40 / 60	45 / 55	50 / 50
2300	.271	.594	.818	1.091	1.181	1.250	1.301	1.336	1.357	1.364
2000	.291	.637	.877	1.170	1.266	1.340	1.395	1.433	1.455	1.462
1700	.316	.691	.952	1.269	1.374	1.454	1.513	1.554	1.578	1.586
1400	.348	.762	1.049	1.398	1.514	1.602	1.667	1.712	1.739	1.748
1100	.392	.859	1.183	1.577	1.707	1.807	1.881	1.932	1.962	1.972
800	.460	1.008	1.387	1.850	2.002	2.119	2.205	2.265	2.300	2.312
500	.582	1.275	1.755	2.340	2.533	2.680	2.790	2.865	2.910	2.924
300	.751	1.646	2.265	3.020	3.270	3.460	3.602	3.699	3.756	3.755
250	.823	1.803	2.481	3.309	3.582	3.790	3.945	4.052	4.473	4.136
200	.920	2.016	2.774	3.699	4.004	4.238	4.411	4.530	4.601	4.624
150	1.062	2.327	3.204	4.271	4.624	4.893	5.093	5.231	5.312	5.339
100	1.301	2.850	3.924	5.231	5.663	5.993	6.238	6.407	6.506	6.539
75	1.503	3.291	4.530	6.041	6.539	6.920	7.203	7.398	7.513	7.551
50	1.840	4.031	5.549	8.009	8.009	8.476	8.822	9.061	9.201	9.248

NOTE: Based on Average Design Effect of 1.71044.

a/ Standard errors are identical for two percentages that are symmetric about 50 percent; thus, paired symmetric percentages are provided.

Table C.2

Generalized Standard Errors for 6-to-11-Year-Olds

Sample Size	Percentage[a/]									
	1 99	5 95	10 90	20 80	25 75	30 70	35 65	40 60	45 55	50 50
1100	.371	.813	1.119	1.493	1.616	1.710	1.780	1.828	1.856	1.866
1000	.389	.853	1.174	1.565	1.695	1.793	1.867	1.917	1.947	1.957
900	.410	.899	1.238	1.650	1.786	1.890	1.968	2.021	2.052	2.063
800	.435	.954	1.313	1.750	1.895	2.005	2.087	2.144	2.177	2.188
700	.465	1.019	1.403	1.871	2.025	2.144	2.231	2.292	2.327	2.339
600	.503	1.101	1.516	2.021	2.188	2.315	2.410	2.475	2.514	2.526
500	.551	1.206	1.660	2.214	2.397	2.536	2.640	2.711	2.753	2.767
400	.616	1.349	1.856	2.475	2.679	2.836	2.951	3.031	3.078	3.094
300	.711	1.557	2.144	2.858	3.094	3.274	3.408	3.500	3.555	3.573
250	.779	1.706	2.348	3.131	3.389	3.587	3.733	3.834	3.894	3.914
200	.871	1.907	2.625	3.500	3.789	4.010	4.174	4.287	4.354	4.375
150	1.005	2.202	3.031	4.042	4.375	4.631	4.820	4.950	5.027	5.052
100	1.231	2.697	3.713	4.950	5.359	5.671	5.903	6.063	6.157	6.188
75	1.422	3.115	4.287	5.716	6.188	6.549	6.816	7.001	7.109	7.145
50	1.660	3.814	5.251	7.001	7.579	8.020	8.348	8.574	8.707	8.751

NOTE: Based on Average Design Effect of 1.5316.

a/ Standard errors are identical for two percentages that are symmetric about 50 percent; thus, paired symmetric percentages are provided.

Table C.3

Generalized Standard Errors for 12-to-17-Year-Olds

Sample Size	Percentage[a/]									
	1 99	5 95	10 90	20 80	25 75	30 70	35 65	40 60	45 55	50 50
550	.501	1.098	1.512	2.016	2.182	2.309	2.404	2.469	2.507	2.520
500	.526	1.152	1.586	2.114	2.289	2.422	2.521	2.589	2.629	2.643
450	.554	1.214	1.671	2.228	2.412	2.553	2.657	2.729	2.772	2.786
400	.588	1.288	1.773	2.364	2.559	2.708	2.818	2.895	2.940	2.955
350	.629	1.377	1.895	2.527	2.735	2.895	3.013	3.095	3.143	3.159
300	.679	1.487	2.047	2.729	2.955	3.127	3.254	3.343	3.395	3.412
250	.744	1.629	2.242	2.990	3.237	3.425	3.565	3.662	3.719	3.737
200	.831	1.821	2.507	3.343	3.619	3.830	3.986	4.094	4.157	4.178
150	.960	2.103	2.895	3.860	4.178	4.422	4.603	4.727	4.801	4.825
100	1.176	2.576	3.545	4.727	5.117	5.416	5.637	5.790	5.879	5.909
75	1.358	2.974	4.094	5.459	5.909	6.254	6.509	6.685	6.789	6.823
50	1.663	3.643	5.014	6.685	7.237	7.659	7.972	8.188	8.315	8.357

NOTE: Based on Average Design Effect of 1.3967.

[a/] Standard errors are identical for two percentages that are symmetric about 50 percent; thus, paired symmetric percentages are provided.

Table C.4

Generalized Standard Errors for Adults (18-Years-Old or Older)

Sample Size	Percentage[a/] 1 99	5 95	10 90	20 80	25 75	30 70	35 65	40 60	45 55	50 50
1700	.296	.647	.891	1.188	1.286	1.361	1.417	1.455	1.478	1.485
1500	.315	.689	.949	1.265	1.369	1.449	1.508	1.549	1.573	1.581
1300	.338	.740	1.019	1.359	1.471	1.557	1.620	1.664	1.690	1.698
1100	.367	.805	1.108	1.477	1.599	1.692	1.761	1.809	1.837	1.846
900	.406	.890	1.225	1.633	1.768	1.871	1.947	2.000	2.031	2.041
700	.461	1.009	1.389	1.852	2.004	2.121	2.208	2.268	2.303	2.314
500	.545	1.194	1.643	2.191	2.372	2.510	2.612	2.683	2.725	2.738
300	.704	1.541	2.121	2.828	3.062	3.240	3.373	3.464	3.518	3.535
250	.773	1.688	2.324	3.098	3.354	3.549	3.694	3.795	3.853	3.873
200	.862	1.887	2.598	3.464	3.750	3.968	4.130	4.242	4.308	4.330
150	.995	2.179	3.000	3.266	4.330	4.582	4.769	4.899	4.975	5.000
100	1.219	2.669	3.674	4.899	5.303	5.612	5.841	6.000	6.093	6.123
75	1.407	3.082	4.242	5.657	6.123	6.480	6.745	6.928	7.035	7.071
50	1.723	3.775	5.196	6.928	7.500	7.937	8.261	8.485	8.616	8.660

NOTE: Based on Average Design Effect of 1.49984.

[a/] Standard errors are identical for two percentages that are symmetric about 50 percent; thus, paired symmetric percentages are provided.